MODERN PACKAGING

AUGUST 1943

AUG 10 1943

To help keep machine guns from jamming . . .

OUR AIR FORCES used to use machine-gun belts made of fabric with individual slots for each shell to fit into.

While these belts are still all right for ground fighting, they have too much play for dependable operation in the air. This is caused by the fact that fabric will stretch when subjected to the extra strain imposed on it by the sharp climbing, twisting, and diving motions of a plane in action. And because of this stretch or play, fabric belts sometimes failed to seat the shells in accurate firing position.

The result was a jammed machine gun . . . an obvious disadvantage in battle.

Today our air forces use ammunition belts made of metal links with each shell acting as a pin to hold the links firmly together. The picture above illustrates the principle with fingers substituted for the actual links.

By manufacturing these finger-like links to precision tolerance, Canco is producing ammunition belts that hold each shell in perfect firing position, thereby greatly reducing the danger of jamming.

Other wartime jobs of ours

Among other products made for battle by Canco, are *complete* torpedoes . . . shell containers . . . hermetically sealed first aid kits . . . portable blood-bank containers . . . parachute-flare containers . . . and many more.

Also in war work are Canco's machine shops . . . long producers of ingenious equipment and tools for the packaging industry. They are now making machine tools so vitally needed to produce weapons of war.

All of these war products require metal —lots of it. That's why metal containers are no longer available for many consumer products. True, we of American Can Company still are making cans for the most essential civilian items, and we are also doing everything possible to develop substitute containers. But with us, as with every other patriotic American manufacturer, the fighting forces must come first.

Stop accidents NOW

—save Manpower for Warpower

Co-operate with the War Production Fund to Conserve Manpower by warning your employees not to take chances.

☆ ☆ **AMERICAN CAN COMPANY** ☆ ☆

230 PARK AVENUE • NEW YORK, N. Y.

FIRST CLASS
PERMIT No. 2656
(Sec. 510, P L & R)
NEW YORK, N. Y.

BUSINESS REPLY CARD
NO POSTAGE STAMP NECESSARY IN THE UNITED STATES

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122 East 42nd Street
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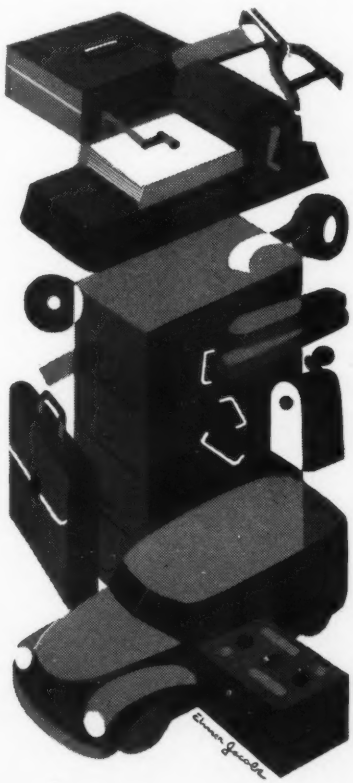
MODERN PACKAGING

122 East 42nd Street

NEW YORK, N. Y.

Convenience is looked upon by many as a word of American invention. And well it could be. For we are a convenience-loving nation. Our office machines and household appliances, our devices of communication and engines of transportation, are designed to do things easily, efficiently and with as little effort as possible. Even American packages must have their factor of convenience. They must seal quickly, open easily and reseal securely . . . for example, like the Phoenix C T Cap. Other advantages of this convenient, continuous-thread closure are: Decorative, yet economical; simple in construction, precision made, standard; uniform in fit and appearance; adaptable to a wide variety of products, packages and methods of packaging; dependable; and withal, convenient to both packager and consumer. Phoenix Metal Cap Co., 2444 West Sixteenth Street, Chicago; 3720 Fourteenth Avenue, Brooklyn.



MODERN PACKAGING

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VOLUME 16 AUGUST 1943 NUMBER 12

IN SEPTEMBER

Much has been said about the future of air freight, but the most efficient and widest use of such service will depend upon the manner in which such air shipments are packed. This is one of the most talked of subjects today in air circles and among suppliers of packing materials. Air Cargo, Inc., a research organization sponsored by the airlines, lists packing methods as the first of 16 distribution factors entering into post-war air transportation. Use of the airplane in the war program for transporting everything from light tanks and jeeps to industrial diamonds provides a vast reservoir of experience in this field. Next month Modern Packaging will present a discussion of this timely subject based on information gathered from the leading sources.

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COVER—Trained dogs aid coastal patrols in tracking down enemy aliens, saboteurs or deserters. Color Photo, Courtesy U. S. Army Signal Corps.

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Famous Old Bitters

Protected by "Cel-O-Seal" Bands

The name "Angostura" is known throughout the world. It is fitting that such a product has the protection of CEL-O-SEAL cellulose bands.

These easily applied bands secure bottle closures . . . keep them tightly in place. They help prevent leakage and evaporation. They forestall tampering. In addition, CEL-O-SEAL bands top off the package in style . . . frequently serving as an attractive second label. If you have a package closure problem, investigate CEL-O-SEAL. Write E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Section, Empire State Building, New York City.

•

Also sold by Armstrong Cork Co., Glass & Closure Div., Lancaster Pa.—I. F. Schnier Co., 683 Bryant St., San Francisco, Calif.

DU PONT

CEL-O-SEAL TRADE MARK **BANDS**

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Uncle Jake says:

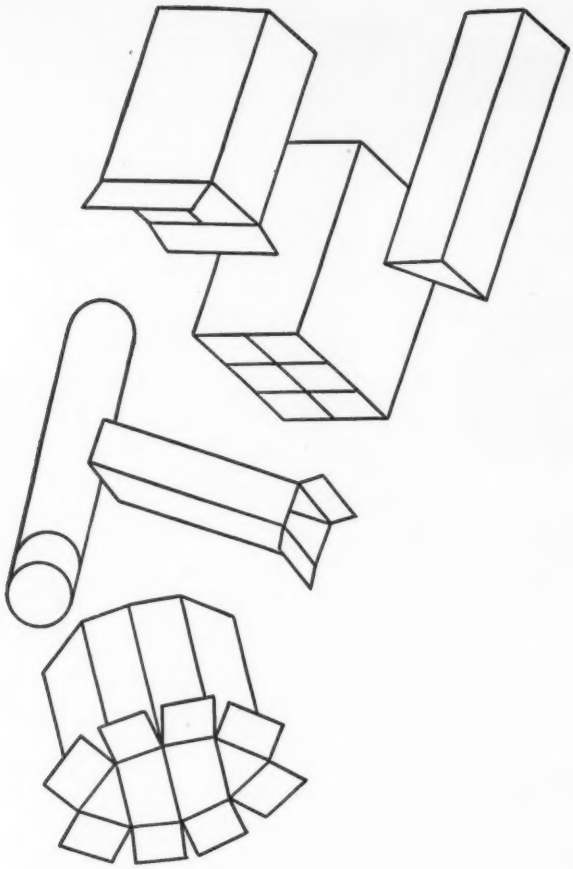
INGENUITY plus COURAGE plus WORK equals MIRACLES *

* A timely thought from KVP

MAKERS OF

FOOD PROTECTION PAPERS

KALAMAZOO VEGETABLE PARCHMENT COMPANY
PARCHMENT . KALAMAZOO . MICHIGAN
BRANCH PLANTS IN PHILADELPHIA, PA., AND HOUSTON, TEXAS



PAPERBOARD PACKS THE ALLIES' PUNCH!

• From minute parts to giant bomber noses and heavy assemblies, thousands of war products today travel in specially designed paperboard packages . . . from sub to prime contractor, from plant to plant, from supplier to military depot—and even to the fighting fronts.

• For nearly three years, Container Corporation has worked with various Government agencies in the development and supply of these war packages—built to save time, space and materials, to cut out waste and damage. Many are illustrated in our booklet, "Paperboard Goes to War," that we offer without cost to all present or prospective war contractors.

• Call or write our nearest office for a copy —and arrange a discussion with one of our packaging engineers.

CONTAINER CORPORATION OF AMERICA

General Offices: 111 W. Washington St., Chicago • New York • Rochester • Natick, Mass. • Philadelphia
Akron • Cincinnati • Cleveland • Circleville • Detroit • Indianapolis • Wabash • Carthage • Anderson, Ind.
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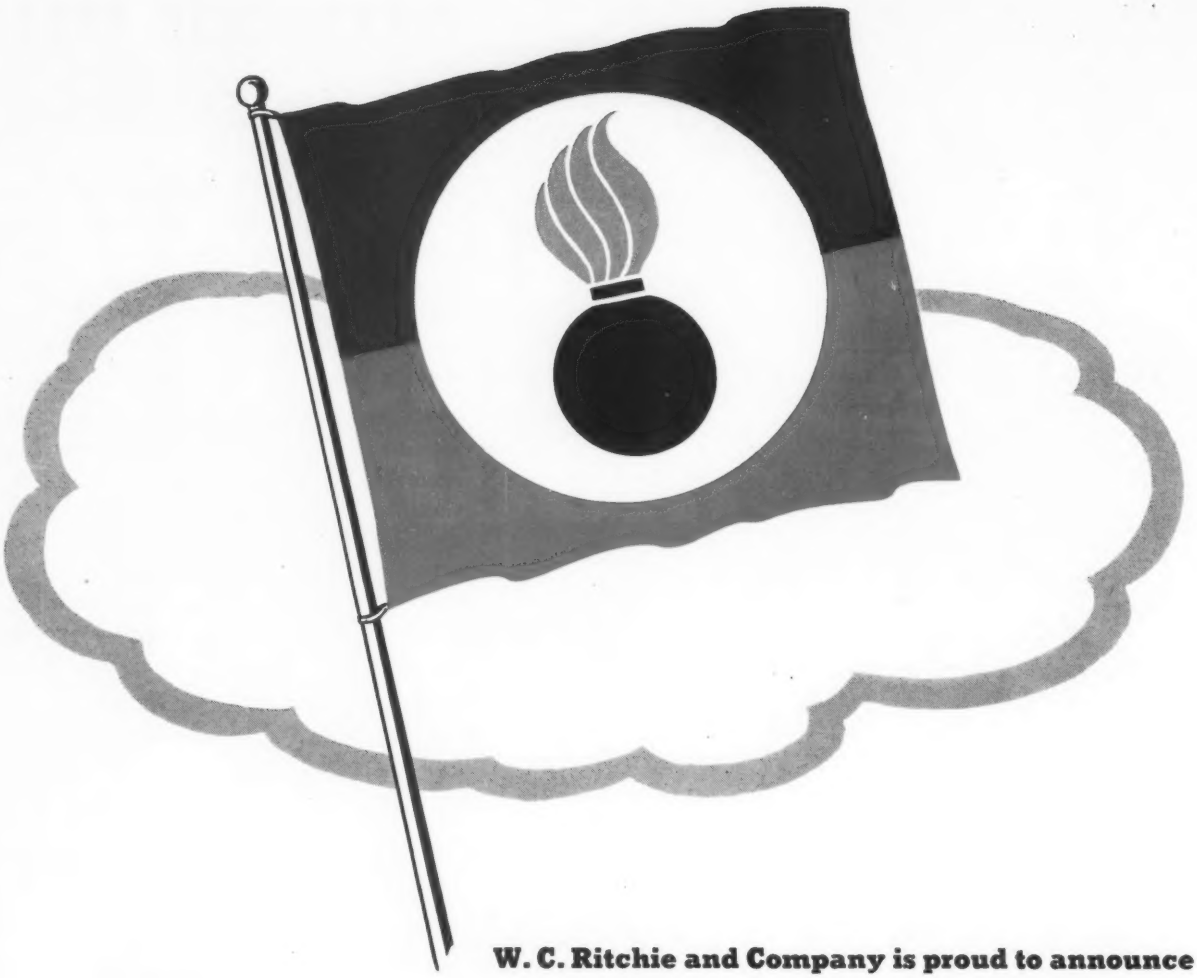
EVERYTHING PAPERBOARD FOR EVERYTHING PACKED



W. C. Ritchie and Company is proud to announce

that the Chicago Ordnance District of the United States Army has awarded

***the Army Ordnance Banner* to Ritchie's Management and Employees for**

MERITORIOUS PRODUCTION

WHAT ARE YOUR WAR-TIME PACKAGING PROBLEMS?

- odd shapes for bulky war goods?
- easier packing containers?
- sturdier packages that stand rough handling?
- simplified design?
- material substitutes?
- steadier supply?

Ritchie may have the answer. Many seemingly insurmountable war-time packaging problems have been solved by Ritchie designers and production men. Uncountable millions of packages come off Ritchie production lines in a constant, unceasing flow—covering the whole range of war-time packages. The chances are we can help you, too.

WHAT ARE YOUR POST-WAR PACKAGING NEEDS?

- a quick supply of former packages?
- creation of more effective packages that rise above those of your competition?
- lower packaging costs?
- increased utility?

Now is the time to make your plans. Ritchie designers and package engineers stand ready to assist you. Let them help you prepare for tomorrow's needs—today. Their one job is to make modern packaging more productive and profitable for you. Call on them, without cost or obligation.

W. C. Ritchie AND COMPANY

8846 Baltimore Avenue • Chicago

SET-UP PAPER BOXES
TRANSPARENT PACKAGES
FIBRE CANS

NEW YORK DETROIT LOS ANGELES ST. LOUIS MINNEAPOLIS DENVER MIAMI

"Efficiency" is one of the picture words of business. It touches off an immediate response in the imagination, and thoughts of "increased simplicity," "improved performance" and "greater satisfaction" appear as if by magic.

Chief among the many aspects of efficiency is accuracy. In fact, accuracy and efficiency are almost synonymous. That may explain why, even though Carr-Lowrey actually is shot through with plenty of practical, result-getting efficiency, we are not inclined to use that term in defining our operations. Rather do we look upon ourselves simply as devotees of accuracy.

From one end of our organization to the other, devotion to accuracy is clearly noticeable. Here is a workman measuring ingredients with the utmost possible care—"just to make sure" . . . here is another tooling a mold with microscopic precision—"just to make sure" . . . here is a blower, a trimmer, an inspector, a packer—all doing their work with painstaking thoroughness . . . "just to make sure."

No wonder the wide variety of glass containers for drugs, cosmetics, household and food products which we make seldom fail to give *complete* satisfaction. YOU CAN'T BEAT BEING CAREFUL . . . and here at Carr-Lowrey everyone knows it—and practices it!

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE, MD., *New York Office:* 500 FIFTH AVENUE, *Chicago Office:* 1502 MERCHANDISE MART

Prewar carrots —still going strong!

. . . A PACKAGER'S DREAM COME TRUE

WAY BACK WHEN It was two months before Pearl Harbor that these carrots were plucked and cleaned and stored away. Stored in sealed-tight wrappers of Goodyear's extraordinary moisture-proof, airproof **Pliofilm.** *That* was more than a year and a half ago.

RIGHT NOW.. You know what ordinary unwrapped carrots look like after a few short weeks. *Now* look at those **Pliofilm**-protected carrots above, after *eighteen months* at 37° F.! Or listen to the official report of the Agricultural Experiment Station of the University of Florida, which made the test: "Loss of weight was negligible, and the carrots held their color perfectly . . . retained their firmness and vitamin content."

And this is only one of many similar sensational results which have been obtained in tests with oranges, grapefruit, lemons, cabbages, apples, peaches, mangoes and other fruits and vegetables!

AND TOMORROW. Today, of course, we are unable to supply you with **Pliofilm** for it is a war-worker-only. But forward-looking marketers are invited to consider the postwar packaging possibilities of this great freshness-preserving material. **Pliofilm** performs the same safeguarding miracles for cheese, meat loaf, sausage, coffee, nuts, pharmaceuticals, chemicals and other air-moisture-sensitive products — seals natural juices *in* — seals unwanted moisture *out.* For further information, write: **Pliofilm** Sales Dept., Goodyear, Akron, Ohio.

Pliofilm

GOODYEAR
THE GREATEST NAME IN RUBBER

Pliofilm—T.M. The Goodyear Tire & Rubber Company

hold back water with PAPER dams? certainly!

Taking the water out of food—dehydration—is a great story.

But *keeping* the water out afterward is a great story, too.

To a growing extent it's a *paper* story.

Tin, metal, rubber and other vital materials were restricted.

"Anyway," said the Quartermasters, "we don't want something just as good as those. We want something better. And remember, the food must ship safely, resist spoilage, and taste good."

The pulp and paper industry reached deep into its resources to keep those foods safe and dry in a watery world.

Laminated cartons, cellophane bags, heat-sealed containers, board and kraft V-boxes – *paper* in its most modern forms did the basic job, and did it well.

To help win this war, paper has been called upon to do thousands of jobs it never did before. Our research men at Oxford see new uses for paper appear almost every day. *Making a thousand miles of paper a day,* as we do, we are constantly in touch with the latest developments and we know that paper has many new worlds to conquer when Victory is won.

We have always specialized in volume production of quality printing papers, label papers and papers "custom-made" for a variety of jobs. But we are at the moment deeply concerned with the broadest possible range of uses for pulp and paper that will contribute to the winning of this war.

In the meantime, Oxford merchants and Oxford salesmen are at your service with quality papers for many uses.

OXFORD PAPER COMPANY

230 Park Avenue, New York 17, N. Y.

• • •

Mills at Rumford, Maine & West Carrollton, Ohio

Western Sales Office: 35 E. Wacker Drive, Chicago 1, Illinois

EVER TRY TO *BEND* A BOTTLE?

Yes THERE'S A DIFFERENCE IN GLASS

EVEN some experienced glass buyers have fallen into the habit of thinking that all glass is pretty much the same—that the only important difference in bottles and jars is in their design. But the truth is that glass itself can vary tremendously.

For example, glass will bend. If you doubt it, simply take a bottle and fill it with water. Cap it and insert a glass tube through a hole in the cap. Then squeeze the container. You'll see the water forced up in the tube because the glass is actually *bending.*

Some glass bends only a little. Other glass is more flexible. The extent to which you can bend a glass container does not in itself mean that the glass is good or bad. It has some effect, of course, on the service that you'll get from it. But its real importance lies in the fact that it proves a point—the point that there is a difference in glass.

And it's the combination of dozens of these little differences, differences in composition, distribution, color, things you probably never thought about, that makes the difference between ordinary glass and top-quality glass.

So remember—just because today's glass packages look alike doesn't always mean that they are alike.

For the interesting story of how fine glassware is made, write for your free copy of Armstrong's booklet, "Men and Glass." Armstrong Cork Company, Glass and Closure Division, 5908 Prince Street, Lancaster, Pa. Glass plants at Millville, N. J., and Dunkirk, Ind.

ARMSTRONG'S GLASS *and* **ARMSTRONG'S CLOSURES**

THE AMERICA OF TOMORROW

Brains and Energy

THE HOPE OF THE FUTURE!

The astounding development and application of the Brains and Energy of a free people, intent on preserving their freedoms, are not alone the assurance of Victory . . . these also are the Hope of the Future.

America will go forward *after* the war on the power of mind, the knowledge and the spirit, gained in *winning* the war. In the America of tomorrow, Sefton Fibre Can Co., too, will be serving you in many new and better ways . . . as a result of our share in the Nation's drive to Victory.

SEFTON FIBRE CAN COMPANY

Plants — St. Louis, Missouri • New Orleans, Louisiana

DISTRICT OFFICES: Los Angeles San Francisco Denver Tampa Chicago Des Moines
New Orleans Boston Detroit Kansas City St. Paul Omaha New York Cincinnati Cleveland
Oklahoma City Pittsburgh Memphis Nashville Dallas Houston Salt Lake City Seattle

This three-compartment package would expose only one-third of the contents to the air as tobacco is used. The sealed compartments are made of a composite material with Alcoa Aluminum Foil on the inner side, next to the contents.

IDEA!

. . . for pleasing pipe smokers

. . . and their wives

You will quickly see how this kind of package could endear a product to women, also. Not for tobacco but for things *she* uses that need to be kept fresh after opening, like tea or dessert powders or prepared flours. The unused portions, sealed in Alcoa Aluminum Foil, will stay fresh until needed.

Notice that the foil is on inside of sealed sections, observing Protective Rule No. 1 of aluminum foil packaging: **keep the foil as close to the product as possible.**

Many packaging materials have absorbent properties. They act as wicks that suck moisture from the product. Aluminum foil *between* them and the product will set up a barrier that resists the passage of air and moisture.

Aluminum foil is but one of the forms in which tomorrow's packages will employ this food-friendly metal. New abundance and new low prices inject Alcoa Aluminum into the thinking of everyone who uses closures, collapsible tubes, bulk shipping containers and other forms still to be Imagineered. May we help you think?

ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh, Pa.

Aluminum is a natural protector

Alone, or in combination with other materials, it excels in preserving freshness, flavor, volume, aroma and color of products that are sensitive to air, light, heat, and gain or loss of moisture. Its sparkling beauty makes a handsome package, too.

Think of ALCOA ALUMINUM

when you think of tomorrow's packages

Advance!

On the world's far-flung battle fronts, our fighting men are carrying out that stirring command—"Advance!" Their courageous deeds are writing a glorious page in history. And helping them to write that history—to keep strong in body—to combat sickness and disease—are collapsible tubes.

These small tubes whose peacetime duties have been devoted largely to such products as tooth paste, shaving cream and powders are now doing scores of vital jobs for our armed forces.

Collapsible tubes hold emergency rations... sulfa drugs... pyrotechnics and many other wartime products. And to provide them Sun Tube is busily at work.

In addition, Sun Tubes are being used more and more for domestic products. Sun Tubes are sturdy and durable, perfect protection against dirt and germs. They are the ideal containers for dozens of everyday products.

If your product needs a container such as Sun Tube offers, we'll be glad to give you details. Just call or write our nearest office for details.

SUN TUBE CORPORATION · · · Hillside, New Jersey

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James L. Coffield, Jr.
360 No. Michigan Avenue

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315 Chestnut St. (Room 125)

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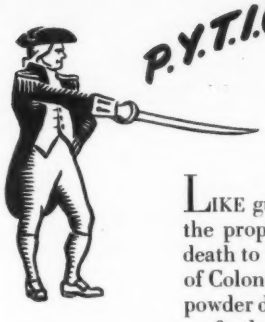


P.Y.T.I.G. and keep your Power Dry!

LIKE gunpowder, the plane motor is the propellant that delivers explosive death to the enemy. The historic words of Colonel Blacker, "... and keep your powder dry," have new meaning in aircraft plants today.

Power, in the form of thousands of precision-built plane motors, goes overseas today, weathersealed, then guarded against moisture corrosion by humidity indicators. Through the clear Lumarith* window in the indicator, the humidity within the motor package can be checked instantly. When the indicator turns from safe blue to unsafe rosy pink, the dehydrating material is renewed and the humidity again drops below the danger point. In this way, horsepower is ready for instant use.

The packaging industry, with Lumarith plastics in window boxes, transparent rigid containers, and combination wrappings, is serving the nation in countless military applications. Built up in peacetime, the teamwork between Lumarith and the industry is doing a war job now.

Celanese Celluloid Corporation, *The First Name in Plastics*, 180 Madison Avenue, New York City, a division of Celanese Corporation of America.

LUMARITH
A Celanese Plastic

*Trade Marks Reg. U. S. Pat. Off.

Your Wartime Package Needn't Be a Stranger!

It's quite a headache—this business of changing from the old, familiar container to a package of different materials, different shape, different size. And, after giving due consideration to the functional characteristics of the wartime successor, you find another problem confronting you—that of preserving the recognition features which have been established over the years.

Even though your new package falls in one of the many so-called "standardized" groups, it still is possible to express individuality. *Helping to preserve personality in wartime packages* is part of our job.

Consult with us on your change-over problems. Let us show you how to retain brand name, trademark design and quality appeal in *their established colors* even though the style of your package undergoes a revolutionary change.

As one of the world's largest producers of packaging materials, and as leaders in the field of Full Color Lithography, we offer you the benefits of experience, skill and ability to turn out packaging of various types in sparkling Full Color at surprisingly modest cost. Write us today.

For over 75 years—headquarters for high-quality, colorful, lithographed labels, box wraps, packets, folding boxes, cartons, merchandise cards and envelopes, displays and advertising materials.

FREE!
Our 28-page book—"The Value and Patriotic Use of Full Color" tells how to get beautiful results at low cost. Write today for your *free* copy.

Contractors to the Government—War Work Comes First!

STECHER-TRAUNG
LITHOGRAPH CORPORATION

Rochester, N. Y. **San Francisco, Calif.**

Offices in Principal Cities

The Snowball that Rolled Uphill!

It was a steep and rugged hill that U. S. aluminum production had to climb back in 1940. The total Axis output was twice our capacity. France was doomed. England was fighting for its life.

But that year, men of vision in the aluminum industry saw what was ahead and began pushing. It was tough going. But swiftly, surely, the snowball of aluminum production rolled uphill.

Reynolds has contributed much to this great effort. Long before Pearl Harbor, we staked all our resources to provide a new source of aluminum—to mine our own Bauxite ore—to build mammoth new factories—to turn out hundreds of millions of pounds of finished metal.

Spurred by Reynolds foresight and daring, the snowball has rolled over the top of enemy output. Now, with the tough uphill battle won, this shining snowball is gathering momentum to crush the Axis.

And when our boys come flying home from victory, they'll fly straight into a new Age of Aluminum . . . a plentiful supply of the miracle metal that *does so many things so much better.*

REYNOLDS METALS COMPANY
General Offices, Richmond, Va.
Parts Division, Louisville, Ky.
37 PLANTS IN 13 STATES

GROWING MORE FOOD *is not enough!*

We need to grow more food... but growing food is not enough... it must be processed and preserved, kept ready for use whenever and wherever needed. This problem of food preservation is now a complicated one, for many materials are no longer available... nor can the food packer be sure where his product will be shipped, or how long it may be in transit or storage.

We have helped many firms to meet these wartime packaging needs, for protective packaging has always been the primary function of Riegel Papers. Their requirements and government restrictions on output now prevent us from accepting new business... but we are still just as able and willing as ever to help you find a solution to your present packaging problems, or to assist in preparing new horizons for your food packaging of tomorrow.

RIEGEL PAPER CORPORATION

342 MADISON AVENUE, NEW YORK, N. Y.

86

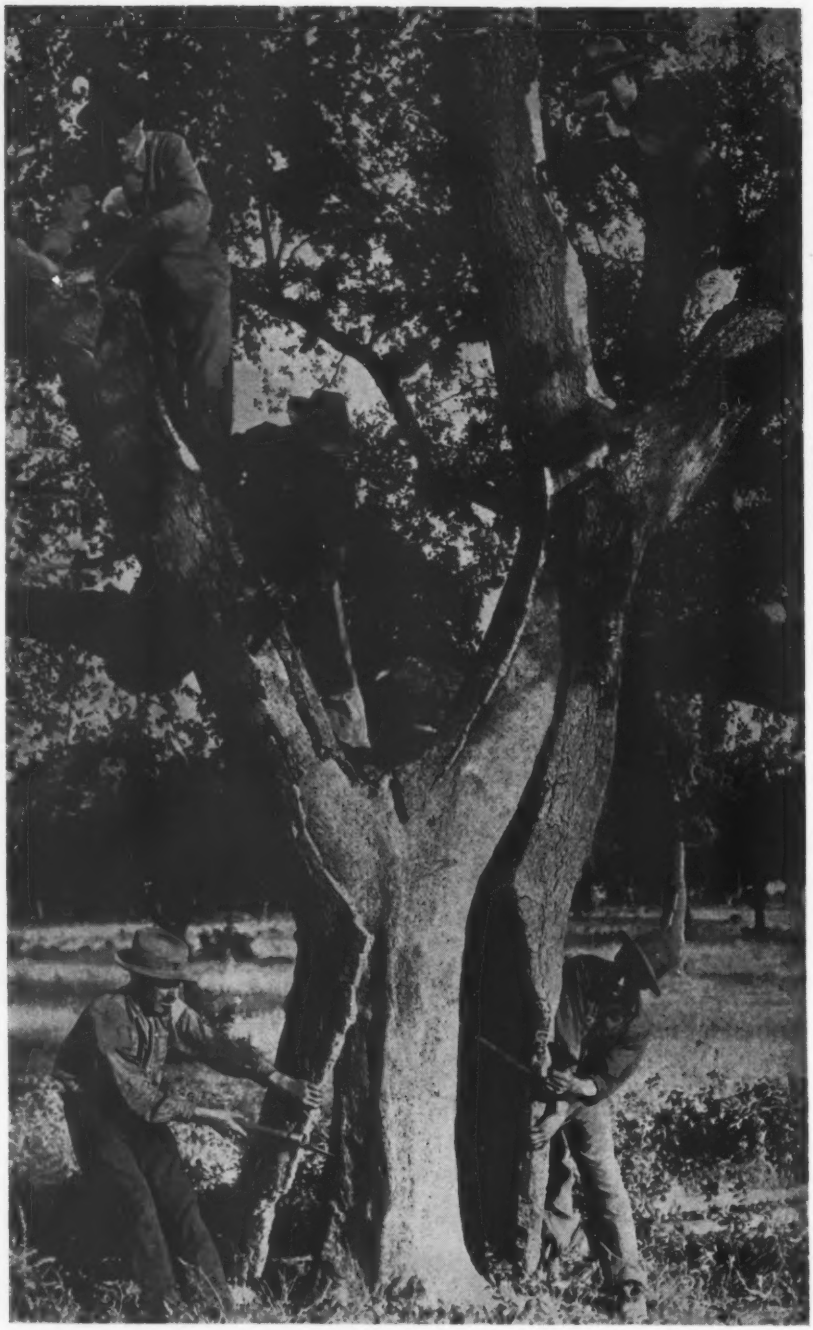
Once considered heavy, fragile, costly, expensive to ship... glass containers today are light in weight, tough, economical, competitive on freight rates. Improved design and manufacturing techniques make the modern glass container up to 37% lighter and so strong that it will resist unusually rough handling conditions. Automatic machinery and standardization now bring you a glass package that in some cases costs even less than other type containers. And today, your product packed in glass receives full freight parity with can-packed goods. Add the show window advantages of glass containers to their non-critical status, and you have today's most logical, practical, effective package.

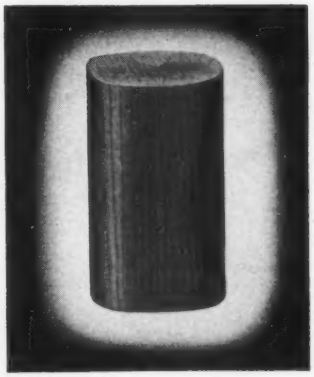
S. R. NICHOLSON, known to his customers and friends as "Nick", is one of Anchor Hocking's ablest and most popular men, has a record of more than 16 years' service.

ANCHOR HOCKING

GLASS & CAPS

ANCHOR HOCKING GLASS CORPORATION LANCASTER, OHIO





Good Bottle SEALING

← Starts Here

. . . with the Cork on the tree!

From this point on, an organization of cork specialists attends to the selection, grading and fabrication of all cork that is used for Mundet Cork Closures.

Good Cork—plus the "know-how" in handling gained in 78 years of specialization —insures the finest cork sealing for your bottled products.

MUNDET

Closure Service

Mundet Cork Corporation, Closure Division, 65 S. 11th St., Brooklyn, N. Y.

WOOD-TOP CORKS • TAPERED CORKS • STRAIGHT CORKS • CROWNS

Meet a PACKAGE *that doesn't take chances!*

"Gas!"—

When that warning is heard, there's no time for checking up to see that a gas mask is in working condition. If it has deteriorated in shipping or storage en route to war areas, IT'S JUST TOO BAD!

Protection against every possible harmful condition calls for PACKAGING THAT DOESN'T TAKE CHANCES. Dobeckmun engineers provide the answer in this package which gets masks issued to service men, guarded from meddling hands—ready to do business.

But that's only one of the numerous wartime packaging jobs these Dobeckmun specialists have handled. They have put their accumulated experience into these assignments and have gained additional experience out of them—valuable know-how in meeting unusual and challenging packaging problems.

As wartime businesses are turned again to civilian needs, there will be many packaging problems to solve—

PACKAGES TO PROTECT DELICATE PRODUCTS

. . . to enhance "eye appeal"
. . . to meet and beat competition
. . . to cut packaging costs and shipping weight
. . . to make your product more successful

There's no obligation to you in opening a discussion of your current and anticipated packaging problems with Dobeckmun engineers. Subject only to the demands of Uncle Sam, they are at your service.

HERE ARE THE "SPECS!"

A jumbo-size double-wall moisture-proof cellophane bag which must pass rigid government tests for water and gas-tightness.

Similar bags function as box-liners for frozen eggs and a multitude of other products.

THE DOBECKMUN COMPANY
CLEVELAND, OHIO · OAKLAND, CAL

Revolver parts shown by courtesy of Smith & Wesson, Springfield, Mass.

BIG PROTECTION
for small parts

Packaging vital Ordnance parts calls for tough, grease-and-waterproof containers like these rugged U. S. E. heat-sealed envelopes. These special-duty packages defy dust and water, keep protecting oils inside, and yet weigh but a fraction of an ounce.

You'll find U. S. E. containers guarding sulfa-drugs, sutures, salt tablets, toilet paper, field rations . . . Serving as packages for small parts, shipping papers, humidity indicators . . . providing boots for rifles, case liners for overseas shipments and moisture-vapor-water-grease-proof containers for many Ordnance materials.

Built to Grade A standards from papers that pass requirements of Spec. AXS 840 R. 1. Write for samples and tell us your hard-to-solve protective packaging problems.

UNITED STATES ENVELOPE COMPANY
Container Division
SPRINGFIELD 2, MASSACHUSETTS

U·S·E *protective packaging*

Products of United States Envelope Company include: WAR PRODUCT PACKAGING • TRANSPARENT CONTAINERS • ENVELOPES WRITING PAPER • LINWEAVE PAPERS • NOTE BOOKS • PAPER CUPS • TOILET TISSUE • PAPER TOWELS

THANKS TO AMERICAN CYSTOSCOPE PRECISION EQUIPMENT MAKING

Like their famous line of precision optical surgical instruments, American Cystoscope Makers, Inc. are now producing equipment of untold value, sending it to the very corners of the world. They are one of the big reasons for beating the Axis and the Axis is now taking lessons from our optical instrument development which has far exceeded anything made abroad.

If your aim is better shipping, investigate Mason MailMaster, the convenient, quick, and safe mailing box whose engineered construction and easy closure make for safe delivery.

THE MASON BOX CO.
ATTLEBORO FALLS, MASS.
175 5TH AVE.
NEW YORK

PAPERBOARD

THE PORT STEWARD BRINGS the paperboard dinner kits aboard a Pan American Flying Clipper at a southern base.

GETS FIRST CALL FOR DINNER

in Pan American's Famous Flying Clippers

Another Gardner-Richardson wartime service

TWELVE TONS OF CLIPPER wing through the air with the galley well supplied with food for twenty-one passengers and a crew of four.

TYPICAL PAN AMERICAN DINNER—soup, salad, fried chicken, dessert and hot coffee—served in a neat paperboard kit.

THESE DAYS you have to be a mighty important person to rate a place on a Clipper scheduled for a war-zone flight. Cargo has to be vital to get aboard, too—not a needless pound is ever loaded into these ocean-spanning planes. Even the meals aloft are served in light, weight-saving paperboard kits that tip the scales at only 8¼ ounces.

These compact Pan American dinner kits—clean and crisp as a freshly laundered tablecloth—are being produced in the Gardner-Richardson plants. They represent just one of many high priority paperboard containers which Gardner-Richardson is making. Some of the others are: cartridge containers, ammunition boxes, gas mask canisters, emergency ration cartons—cartons for lend-lease foods, ordnance parts and medical supplies. And because of its intensified research and development during the war period, Gardner-Richardson will be ready to offer even finer folding cartons when times are again normal.

The GARDNER-RICHARDSON Co.

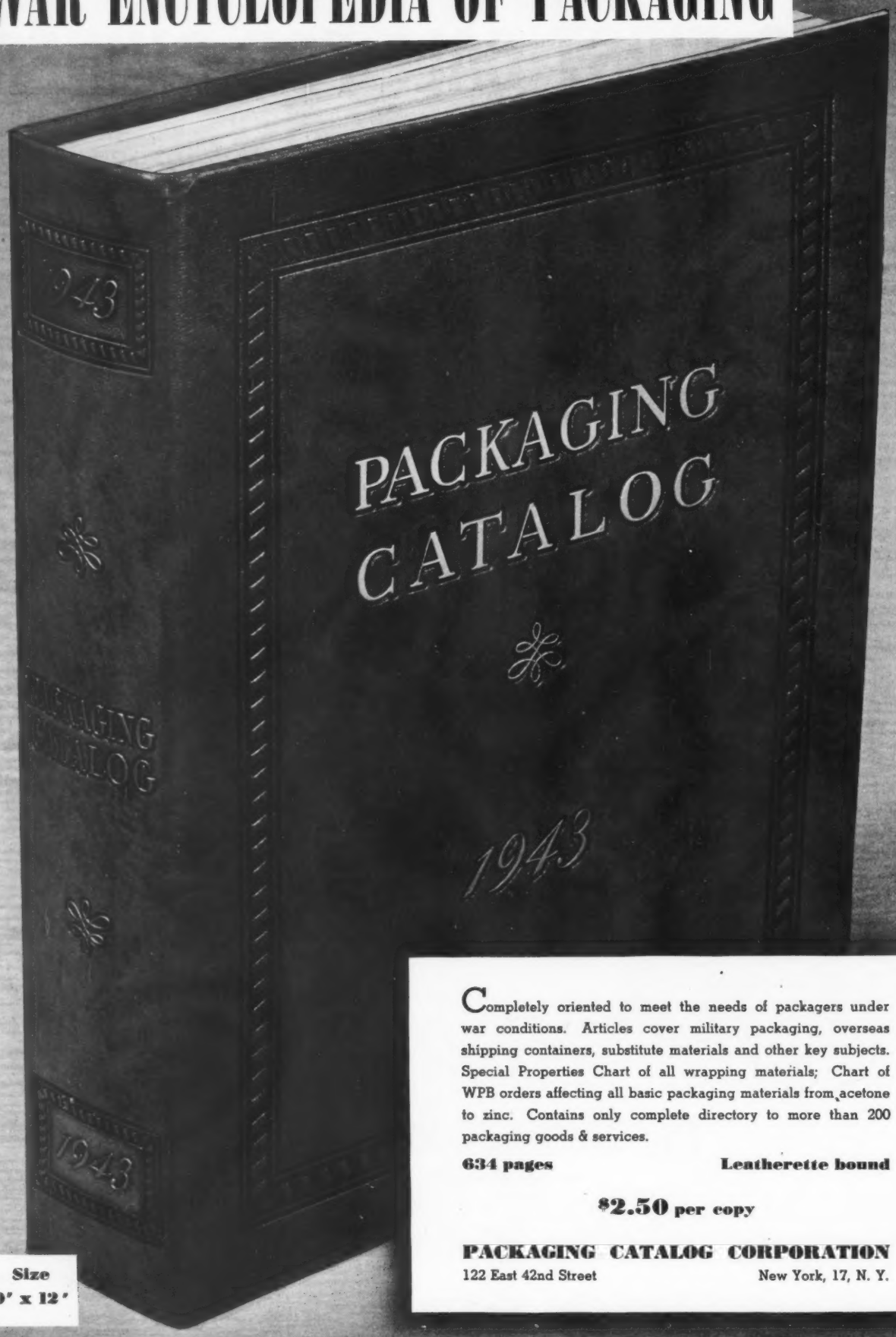
Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

GARDNER-RICHARDSON FROM PULP TO FINISHED PRODUCT ENGINEERED PRECISION

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

WAR ENCYCLOPEDIA OF PACKAGING



Completely oriented to meet the needs of packagers under war conditions. Articles cover military packaging, overseas shipping containers, substitute materials and other key subjects. Special Properties Chart of all wrapping materials; Chart of WPB orders affecting all basic packaging materials from acetone to zinc. Contains only complete directory to more than 200 packaging goods & services.

634 pages **Leatherette bound**

$2.50 per copy

PACKAGING CATALOG CORPORATION
122 East 42nd Street New York, 17, N. Y.

Size
9" x 12"

★ ★ ★ Protecting Food

THAT'S THE JOB FOR
MILPRINT PACKAGING

Now, more than ever, food is precious — vital! Its proper protection during the journey from producer to ultimate consumer assumes a new significance. Too—the process is complicated by the scarcity of, or restrictions imposed on many conventional packaging materials.

Designing and producing packages has been our business for more than 45 years. Today we are producing more kinds of packaging material for a greater variety of foods and other essential products than ever before.

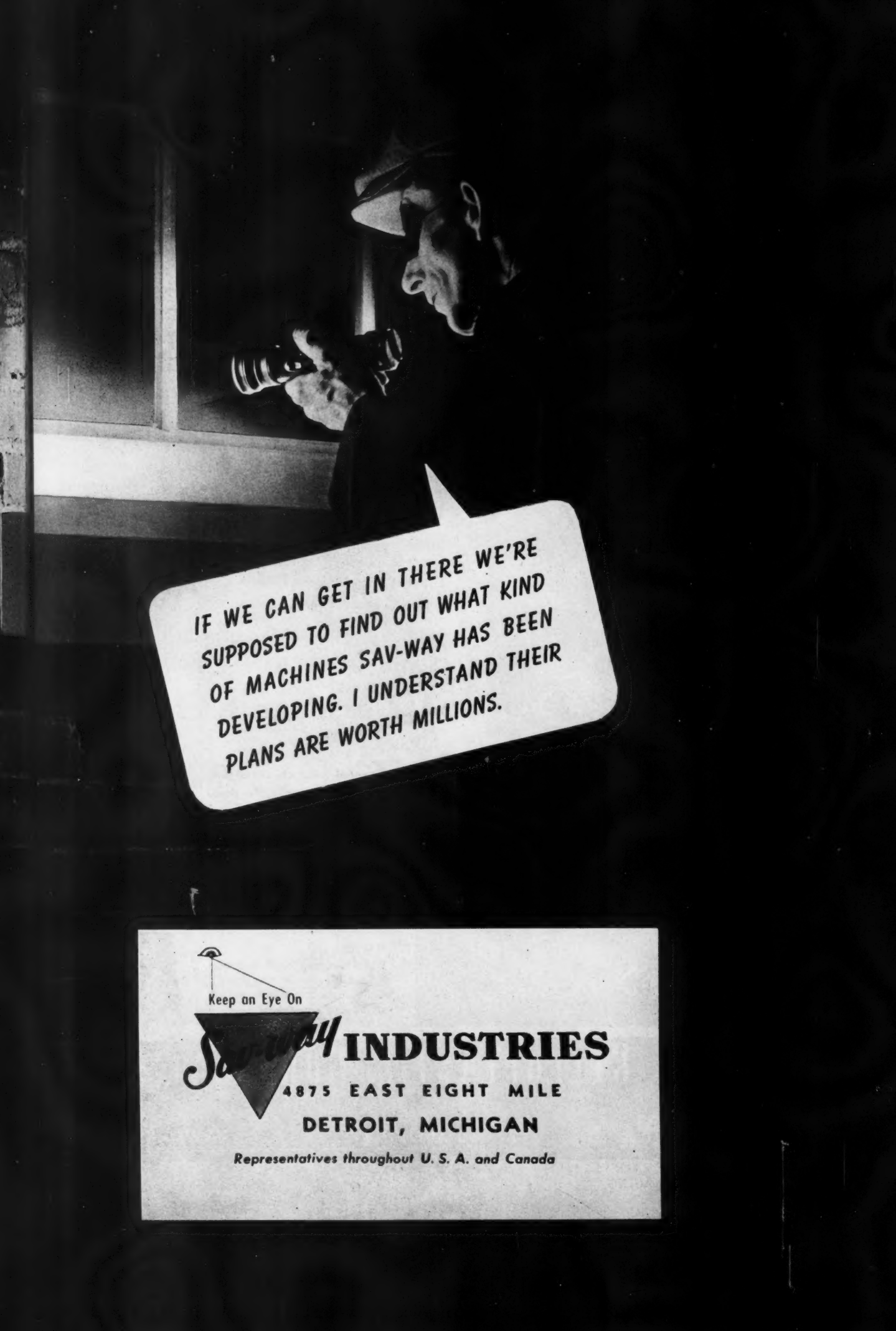
The experience, resources and capabilities which have made this record possible — can well mean that we have the answer to your packaging problems. Get in touch with your local Milprint Packaging Engineer or write us direct.

PACKAGING ENGINEERS TO A NATION AT WAR

MILPRINT Inc.

Plants at MILWAUKEE • PHILADELPHIA • LOS ANGELES • REPRESENTATIVES IN ALL PRINCIPAL CITIES

WHAT ARE WE AFTER?


IF WE CAN GET IN THERE WE'RE SUPPOSED TO FIND OUT WHAT KIND OF MACHINES SAV-WAY HAS BEEN DEVELOPING. I UNDERSTAND THEIR PLANS ARE WORTH MILLIONS.

Keep an Eye On

Sav-way INDUSTRIES

4875 EAST EIGHT MILE

DETROIT, MICHIGAN

Representatives throughout U. S. A. and Canada

Containers You never see!

Featherweight, seamless, *shatterproof* message-carriers

We're turning out censored quantities of flightweight capsules destined to serve as messenger containers for the armed forces. The *shatterproof*, seamless quality of these tiny protective capsules make them important in the U. S. A. Signal Corps.

Some CONTAINERS *ARE* essential....

CELLUPLASTIC

serves the Fighting Forces...

Essential products come *first*. That's understood! BUT—if *you* manufacture a commodity that is essential, and need the advantageous features of Celluplastic, we will gladly furnish details.

Photos at left and in circle are by the U. S. A. Signal Corps.

Our Designing Staff is ready to serve you in developing Celluplastic containers of all styles and dimensions.

CELLUPLASTIC CORPORATION

FIRST IN CELLUPLASTICS

HYCOLOID-CLEARSITE

60 AVENUE L NEWARK, N. J.

He doesn't speak one foreign language. He has nothing to do with our export business. But still he's an important interpreter—of facts.

We used to call him Salesman, but his real business now is explaining W.P.B. orders, shipping orders, priorities and how we can deliver the maximum number of standardized jars in the shortest possible time.

This is a big job and we are proud of the way our men are doing it.

AZEL-ATLAS GLASS COMPANY, WHEELING, WEST VIRGINIA

IF YOU'RE MAKING MORE MONEY

...WATCH OUT!

WE WANT TO WARN YOU, before you read this page, that you've got to use your head to understand it.

We also want to warn you that—if you don't bother to read it carefully enough to understand it—you may wake up after this war as poor as a church mouse.

• • •

This year Americans are going to make —minus taxes—125 billion dollars.

But this year, we civilians are not going to have 125 billion dollars' worth of goods to spend this on. We're only going to have 80 billion dollars' worth. The rest of our goods are being used to fight the war.

That leaves 45 billion dollars' worth of money burning in our jeans.

Well, we can do 2 things with this 45 billion dollars. One will make us all poor after the war. The other way will make us decently prosperous.

This way the 45 billion dollars will make us poor

If each of us should take his share of this 45 billion dollars (which averages approximately $330 per person) and hustle out to buy all he could with it—what would happen is what happens at an auction where every farmer there wants a horse that's up for sale.

If we tried to buy all we wanted, we would bid the prices of things up and up and up. Instead of paying $10 for a dress we're going to pay $15. Instead of $5 for a pair of shoes we're going to pay $8.

This bidding for scarce goods is going to raise prices faster than wages. Wages just won't keep up.

So what will people do?

U. S. workers will ask for more money. Since labor is scarce, a lot of them will get it. Then farmers and business men who

feel the pinch are going to ask more money for their goods.

And prices will go *still higher*. And the majority of us will be in that same old spot again—only worse.

This is what is known as Inflation.

Our government is doing a lot of things to keep prices down . . . rationing the scarcest goods, putting ceiling prices on things, stabilizing wages, increasing taxes.

But the government can't do the *whole job*. So let's see what *we* can do about it.

This way the 45 billion dollars will make us prosperous

If, instead of running out with our extra dough, and trying to bid on everything in sight, we buy only what we absolutely need, we will come out all right.

If, for instance, we put this money into (1) Taxes; (2) War Bonds; (3) Paying off old debts; (4) Life Insurance; and (5) The Bank, we don't bid up the prices of goods at all. And if besides doing this we (6) refuse to pay more than the ceiling prices; and (7) ask no more for what we have to sell—no more in wages, no more for goods—*prices stay where they are now.*

And we pile up a bank account. We have our family protected in case we die. We have War Bonds that'll make the down payment on a new house after the war, or help us retire some day. And we don't have taxes after the war that practically strangle us.

Maybe, doing this sounds as if it isn't fun. But being shot at up at the front isn't fun, either. You have a duty to those soldiers as well as to yourself. You *can't* let the money that's burning a hole in your pocket start setting the country on fire.

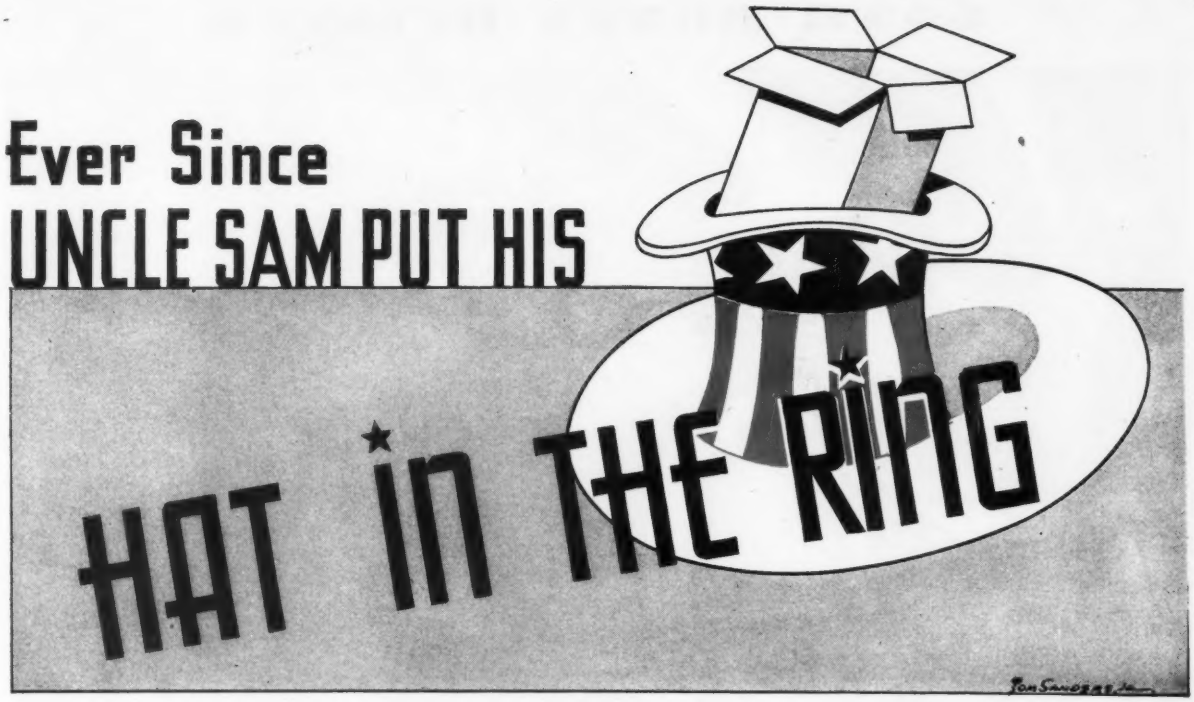
★ ★ ★

This advertisement, prepared by the War Advertising Council, is contributed by this Magazine in co-operation with the Magazine Publishers of America.

KEEP PRICES DOWN!

Use it up
Wear it out
Make it do
Or do without

Ever Since UNCLE SAM PUT HIS HAT IN THE RING



our boxes have been there, too

PROTECTING AND PASSING THE AMMUNITION

Corrugated Shipping Cases and Paperboard Folding Cartons are vital necessities in global war! They're doing a brilliant job of getting needed supplies to the front faster . . . and in usable condition. They have proved their worth in every climate by standing up under the most severely abusive extremes of moisture, heat and cold.

Apaco is helping Uncle Sam by supplying the packaging to "pass the ammunition" to our front lines. On the home front, too, Apaco Corrugated Shipping Cases, Folding Cartons and Fibre Drums are doing a fine job . . . replacing critical metals and woods needed in the war effort.

Apaco is geared for war work and WILL REMAIN SO until Victory is won!

★ CORRUGATED SHIPPING CASES ★ BELSINGER TEXTILE SHIPPING CASES ★ FOLDING CARTONS
★ MULTI-WALL BAGS ★ FIBER DRUMS ★ GARMENT BAGS ★ GROCERY BAGS
★ TWINE ★ GUMMED TAPE ★ TEXTILE PACKAGING SPECIALTIES

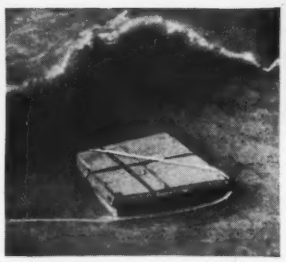
Atlanta PAPER Company

AUGUSTA PAPER CO., Augusta, Ga. GEORGIA-ALABAMA PAPER CO., Columbus, Ga. MEMPHIS PAPER CO., Memphis, Tenn.

75th Anniversary Year

ATLANTA, GEORGIA

GAIR BOXES DELIVER



The SURF TEST — Write for booklet *showing photographic record of ocean submersion tests made by Gair to meet U. S. Quartermaster Specification No. OQMG-93, Navy Specification 53B11. Complies with Lend-Lease Specification FSC-1742-B and Ordnance Specification FXS-511.*

NO MARGIN FOR ERROR

In the holds of ships, on freight carriers and in air transport, every available square inch must be used to permit capacity loading. The packaging of goods to go in these cargoes must afford dependable protection in transit . . . for breakage means loss of material and waste of time. Gair is meeting the extraordinary container specifications for delivering war needs—ammunition, food, medical supplies, clothing—to arrive at their far-flung destinations, whole, dry, perfect, ready for action.

Robert Gair Company, Inc., New York—Toronto

FOLDING CARTONS • BOXBOARDS • FIBRE & CORRUGATED SHIPPING CONTAINERS

Booby traps that look like varnish cans!

Remember when you used to walk into a store and buy a gallon of varnish? The man handed you a can with a screw top and a handle.

Who'd have thought that this very same can would some day become a booby trap—a deadly land mine? It has!

The soldier in the picture is planting this booby trap. It's an anti-tank mine containing explosives that cripple a tank by wrecking its treads. Two wires run from inside the can to hidden trip wires that set off the explosion.

Do you wonder now why you can get only certain cans for civilian use? Cans have gone to war! There are good reasons why the can, more than any other container, is needed for war.

Cans are tough customers. They're impervious to heat, cold, moisture. Dirt, insects, gas and light can't get into them. They don't break, chip, tear. Things get there—*safe*—in cans!

The cans that are away helping American boys fight will be back some day. They'll be even better cans. We're gaining new and useful knowledge as "Packaging Headquarters for America" at war.

CONTINENTAL CAN COMPANY

HELP *CAN* THE AXIS—BUY WAR BONDS

A MIRACLE THEN

But Not Good Enough Today!

In 1877, Edison's phonograph startled the world. Remarkable then, but elementary compared to the electronic reproductions of today.

NEUTRAGLAS . . . offering the highest resistance to solvent action and chemical attack . . . was developed by Kimble because no glassware can be just "good enough" if better is obtainable.

Standardize NOW *on Kimble Amputs, Serum Vials, Serum Bottles and Clinical Glass containers of* NEUTRAGLAS.

• • • *The Visible Guarantee of Invisible Quality* • • •

KIMBLE GLASS COMPANY • • • VINELAND, N. J.

If you're not sure of your supply of metal or plastic caps . . .

here's what to do <u>now</u> about corks

THERE is a definite possibility of a large cut this fall in the supply of critical steel and plastics for closures.

Manufacturers of many products may have to rely upon corks as closures. The cork industry at present has the material and the productive capacity to supply these corks. A WPB press release dated June 15 stated that "over-all cork stocks in this country are at an all-time peak" and that it is desirable that they be used wherever possible.

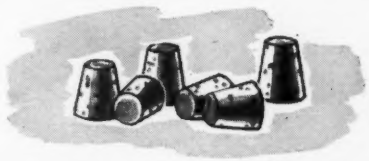
If you fear that you may be affected by restrictions on supplies of steel and plastics for closures,

start planning *now* for possible conversion to cork closures. Otherwise, this wartime adjustment—like so many others—may create costly "bottlenecks," with subsequent difficulties and delays in your operations.

Here are three things you can do right away:

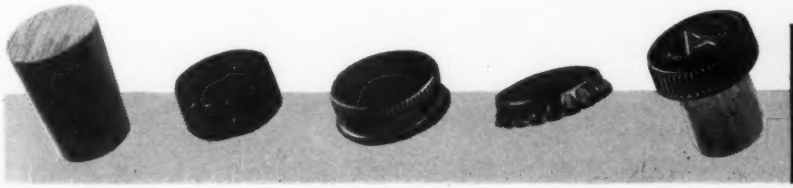
1. Get in touch with your bottle manufacturer and determine the bottle finishes you may have to use.
2. Determine the types, sizes, and qualities of the corks you may have to use. If at all possible, plan to use standard-sized corks. Corks which are special in top diameter, length, or degree of taper require extra time and material—thus reducing the total number of corks the cork industry can supply.
3. Get in touch with your nearest Armstrong representative and work out a tentative production and delivery schedule with him. Armstrong's 83 years of leadership in the cork field, plus its experience as a large producer of metal and molded caps, assures you of expert and impartial advice on all closure problems.

By taking these three steps now, you will not only assure prompt and efficient delivery of your own sup-



ply of corks, but you will materially help the entire cork industry do an efficient job of supplying vitally needed closures.

For further information on how to meet wartime closure problems, see your Armstrong representative, or write Armstrong Cork Company, Glass and Closure Division, 5908 Prince Street, Lancaster, Pennsylvania.



ARMSTRONG'S CORKS and CAPS

Sylvania Cellophane*

Thin, tough, transparent Sylvania* Cellophane . . . peer of packaging . . . protecting America's foods. . . on the home front . . . on the fighting fronts. Serving, too, various and very important military requirements. To its quality story there is now being added many new chapters of service—chapters that will greatly enhance Sylvania Cellophane's future usefulness.

SYLVANIA INDUSTRIAL CORPORATION

General Sales Office: 122 East 42nd Street, New York 17, N. Y.
Works and Principal Office: Fredericksburg, Virginia

*TRADEMARK REG. U.S. PAT. OFF.

MODERN PACKAGING

AUGUST 1943 VOLUME 16 NUMBER 12

We must share the shortages—or else!

Let's face it—packaging activities are confronted with drastic reductions that are getting tighter each day. A careful check shows that at least 84 different substances, commonly used in packaging, are under government control. Supplementary orders, increasingly restrictive, appear daily.

Some Pollyanna utterances are heard, telling us that because the war news is good we can relax our efforts, or because the war production program has been so successful all basic raw materials are going to become more plentiful.

To accept these reassurances at face value would merely be a childish form of kidding ourselves. Today and for several tomorrows the hungry maw of the military machine will continue to clamor for subsistence, supplies and matériel, all being used up at the terrifically destructive rate which is a part of total war. Ahead of us are increased activities on the military front which will accelerate that destructive consumption. Such will be the inevitable result of following up the military gains which the good news tells us about. No one would raise a finger to impede that follow-up.

Long ago we all knew that for a considerable time packaging would not be as usual. First pinch was metal. As it was denied to an increasing number of products for packaging purposes, many of those products moved into glass. The glass industry has nearly doubled its normal capacity in order to carry the extra load and has cooperated with the government in the development of simplification standards to make the supply go further. Even so, the industry is 15 per cent to 20 per cent oversold. The plastics used for packaging have proved so unbelievably efficient for a thousand and one military jobs that they are to be had for closures only—and then only in limited form for the most essential products. How long even this will be the case no one knows.

Up to the present time, paper has played the versatile and willing part of making up for these other shortages. A little over a year ago, cries of "Wolf, wolf," brought on a phony shortage in the paper field. Now, dead ahead of us is a real shortage of paper and paperboard.

Paper consumption in recent years has amounted to approximately 20 million tons per year, including imports. This is divided up among four broad fields. Perhaps 6 million tons are devoted to what may be called educational purposes—books, magazines and newspapers. (The latter use approximately 4 million tons, 75 per cent of which is Canadian production.) Ab-

sorbed for communication and records are perhaps 3½ million tons. Wrappings, distribution and commercial activities use 2½ million tons. Packaging consumes 7½ million tons.

Military purchases in these recent years have added tremendously to the consumption of paper for packaging purposes. To be sure, the civilian economy is now at a low point, but what is not used for packaging is far more than offset by the increased military demands.

Packaging is a highly essential necessity. Even in normal times the vast portion of paper used for packaging purposes performs *utility* functions. The fact that it lends itself to beautiful exterior appearance through the medium of color printing in no way interferes with its primary all-important protective function, that of delivering the product from the factory to the consumer. Unhappily the superficial observer sees only the external and realizes not at all what that primary function is. Without this protective power of paper—supplemented, of course, at times with other materials—the program of war production would break down with appalling suddenness and the civilian economy would face chaos.

To be specific, here is a partial list of army, navy, marine, coast guard and air corps materials, packaged at least in part by means of paper and paperboard: tools, engine parts, radios and parts for the signal corps, blood plasma, emergency rations, gas masks, ammunition from the .30 calibre bullet to the 8-in. shell, dehydrated foods, precision parts, airplane engines—the list is simply endless—and almost every packaging specification mentions paper or paperboard in some form. These are dramatic uses of paper for packaging. Who can calculate the value of indispensable materials that have been wasted because of faulty packaging?

Less dramatically perhaps, but with equal facility, paper performs these protective functions in the civilian economy. Without adequate packaging there would be untold waste of all too precious foods, medicines, clothing, textiles and other necessities of life. On the civilian side it is certainly plain that manufacturer, distributor and consumer are all doing their part to strip down to barest necessities in packaging as well as everything else.

But there is a commonly held misconception about packaging; there is little or no general understanding of the extent and variety of packaging uses which paper products perform. Therefore, simply because the broad field of packaging accounts for the largest consumption of paper and paperboard, there seems to be apparent a disposition to make packaging take more than its share of the load when it comes to reducing the consumption. The Containers Branch of WPB—composed of hard-working, level-headed and conscientious individuals—has let itself be saddled with the responsibility of making most of the savings. Industry Committees have cooperated valiantly and often to their own financial hurt, but—is packaging to take the full rap because of this misconception?

Naturally, each group of paper users considers its own use as the most important; that is a healthy manifestation of the competitive spirit which we all want to retain as the basis of American industry. But in fairness the question should be raised: Are the conservation requirements falling with equal force on all of these fields? In the matter of communications and records, for instance, couldn't supplies be reduced for the time being without the entire business structure going to pot? In the field of publications, the Pulp and Paper Branch of WPB has steadfastly dodged the issue of pronouncing on the essentiality of periodicals. With commendable courage, however, that branch has issued directives intended to prevent the establishment of new periodicals.

In the field of newspaper publishing, we certainly do not advocate such drastic reductions as Great Britain has found it necessary to adopt and we'd be among the first to protest against any measures that would threaten the freedom of the press. But there are plenty of people who believe that newspapers could make increased savings in paper consumption without any impairment of their vital service to the public or without any sacrifice of the freedom of speech which is so important to all of us.

Similarly in the commercial field: Normally we have nothing but praise and admiration for promotional campaigns and direct mail material and every businessman must retain the right to present his product or his service by means of attractive, printed material. But today when business concerns can't even accept orders, is there any reason why these materials cannot be further reduced? Two examples from one day's mail: A 48-page booklet, gotten out by a bakery company, size 8½ in. by 11 in. on beautiful 100-lb. enamel paper, with 150-lb. cover, average content of page 21 words and an illustration, with three or four blank pages in the book—a beautiful and interesting presentation. But couldn't it be dispensed with now, particularly when this company can't possibly fill its orders? The second example is a 9 in. by 12 in. 16-page booklet gotten out by a paper company who simply refuses to accept any orders for paper delivery. That booklet, too, could have waited,

with benefit to our overcrowded mail service.

The point is we are all in the same boat. Nothing could be gained by any of us taking gratuitous cracks at the rest. We must all share the cuts.

WPB's Container Branch is working with desperate energy to perfect the details of a five-point program which we had hoped to announce in this issue, but it will have to wait because at the time of going to press it hadn't gone through the ordeal of Washington red-tape for approval. The five points are:

1. Do not over-package,
2. Use the largest container practicable.
3. Get maximum re-use,
4. Participate in proper salvage drives,
5. Do not order more containers than your absolute and immediate need.

But the Containers Branch cannot carry the whole load, particularly when their permitted operations are limited to chalking up theoretical savings on the scoreboard. The problem can't be solved by any attempt to make good a deficiency solely by minute conservations. The situation calls for additional measures.

First of all, as we have already indicated, there should be a change in fundamental attitude, so that every branch of the government and every paper user should realize that packaging is essential. Packaging needs more paper now because virtually all other materials have been taken away from packaging uses. Other users of paper should be called on to make their sacrifices because packaging is doing a job that concerns them, too.

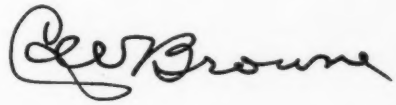
Military procurement bureaus have—and should have—first call on all production and all necessary packaging materials. Have these bureaus taken the medicine too? Are they insisting on impossible and unnecessary packaging requirements? Are they listening to practical suggestions for conservation that come from conscientious and practical packaging men? For instance, some of the packaging specifications insist on virgin pulp to be used in the corrugated and fibre containers to pack certain products, instead of permitting the use of containers made partly from reclaimed material. Everybody in the container field knows that the jute container has a long record of satisfactory use and that nothing is accomplished by insistence on virgin pulp except a totally unwarranted over-consumption of the very material now becoming so scarce, without any improvement in the packages in question. At the same time, there is a failure to use the scrap paper which other departments of the government are at such pains to collect.

What we are driving at is this: All of these conservation and reclamation plans are important and *every* user of paper should participate in them whole-heartedly, but the total net savings thus made are not enough by themselves to solve the problem. The packaging jobs which paper must do are vital. If those jobs are not done, the war effort will be ham-strung and the whole civilian economy will suffer.

This means that the situation must be carried higher. The seriousness of the problem must be demonstrated to the top-side executives. For instance, the War Manpower Commission must realize that the harvesting of pulp wood is an essential activity comparable to steel production or oil distribution. The woods are literally full of this plentiful raw material all ready and waiting to be gathered and used. A few thousand men put to work at this occupation would make a vast difference in the supply of paper.

This is not a special plea for a particular industry. Now is no time for special pleas or individual privileges. It *is* time to get a proper perspective so that we may evaluate every activity in relation to its importance. In the case of packaging this is admittedly difficult because packaging is not a single industry; it is an activity of hundreds of industries which just now are all working with might and main for a single cause. If we consistently apply the principle of end use for pulp and paper allocation, obviously some packaging activities will be ruled out for the present; and they should be. But with equal clearness it will be seen that the vast majority of packaging activities—as now conducted—are a vital and indispensable contribution to the war effort and to civilian economy.

Those activities face the impending shortage. That shortage is not based on lack of raw material—the material is plentiful. The shortage can be relieved. But if packaging is to benefit, there must first be a more widespread recognition of the functional aspects of packaging; there must be a more equitable distribution of the necessary cuts so that packaging won't carry a disproportionate share of the load; there must be universal support of all conservation, re-use and reclamation programs; and the top-side executives must realize the necessity of providing manpower to harvest pulp logs. If those steps are taken, the vital functions of packaging will continue to perform their tasks. If not, the resulting waste of every imaginable product will impede the war effort to a degree little short of criminal.



V-Box stylists say "No Sleeves"

Army officials are worried over the possibility of a fibre box shortage before the year is over. Their worries increase in proportion to the amount of military activity because the more fighting there is, the more containers are needed.

Furthermore, the containers must be better than anything ever known before this war. Army officers coming back from various fronts early in the war were literally sick over the sight of spoiled food and equipment made useless after thousands of miles in transit because of moisture penetration, insect infestation, rust, actual breakage or any of the many things that can happen to material which isn't packed to withstand the rigors of severe climate and handling under war conditions.

Peacetime packaging is no teacher for wartime practice. A battery can be shipped from Toledo to Portland in an ordinary container in ordinary times with small chance of damage. When a battery is shipped to the Solomons in the same container, chances are better than two to one that it will be ruined by moisture penetration. Consequently when goods are shipped abroad in wartime, they must go in better boxes, and better boxes require more material.

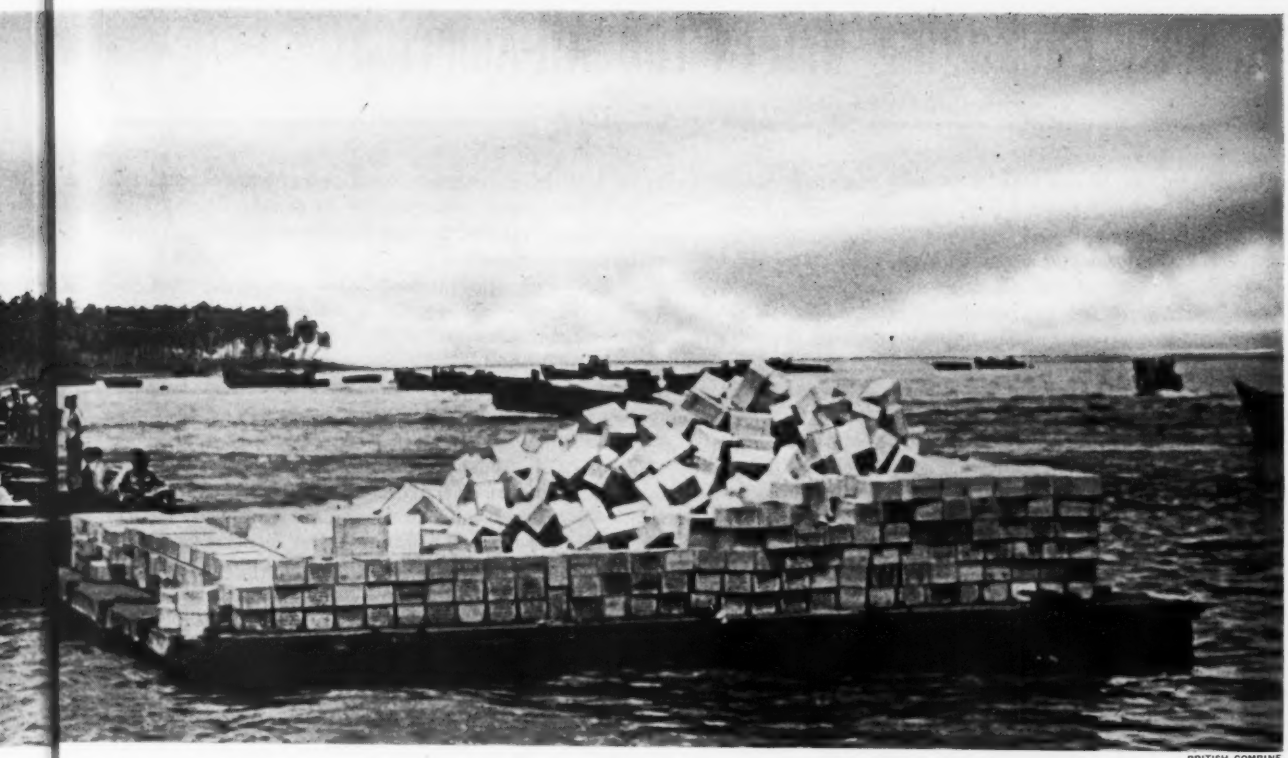
To meet this wartime demand, the Services, WPB, and the container industry cooperated to develop the now famous V-board. It has given good results so far as known, but Army officials insist that tests under actual invasion conditions are not yet conclusive.

A prominent feature of many V-boxes is a sleeve which fits over the container to give it added strength and seal the flaps, but the sleeve requires additional wood pulp and wood pulp becomes more critical daily. Thus when WPB asked the Weatherproof Fibre Box Group what could be done about the growing scarcity of raw materials, the group made this suggestion:

"Cut out the sleeves and use four metal straps instead of two." This recommendation was made despite the fact that it would cost them about $15,000,000 in business, but today wood pulp is far more important than profits, and wood pulp saved by elimination of sleeves would make more fibreboard available for more boxes.

The necessity for conservation of wood pulp is no secret. It is well known that consumption is running far ahead of production and what is worse, there is no reason to hope for any improvement in production. There simply isn't the manpower to bring it in.

Recent production of container board has been about 70,000 tons a week, but since April consumption has run at least 10,000 tons a week ahead of production. New needs for container board are constantly in the offing. In addition to increased military activity, something like 60,000 tons will be needed for synthetic rubber cases, according to well-informed Washington authorities. There is good reason to believe an authoritative estimate that at present rates of production and new rates of consumption, there will be a shortage of at least 500,000 tons of container board. That figure represents hundreds of thousands of boxes. If the shortage becomes acute, there may not be enough for the



BRITISH COMBINE

Will a weatherproof fibre box without a sleeve for added protection stand up under the treatment such boxes are getting in the landing operation above? Army spokesmen are not so sure. The weatherproof Fibre Box Group says "yes" and herewith are presented some reasons they give for their belief.

armed services alone. Anyone can guess what might happen to domestic industry if there were no containers to pack the goods in. This is no phony paper shortage such as the one at the beginning of the war. It has all the earmarks of the real article, according to practically every paper man in Washington.

In addition to container board, there are other material shortages. Corn starch is an example. With the disappearance of cassava into the Japanese maw, enterprising adhesive experts experimented with corn starch as a substitute. Now that they have successfully completed their experiment, another shortage confronts them. The price structure of corn has become unbalanced, and it is difficult to obtain for industrial purposes. Few farmers will sell corn for industrial purposes at around $1.00 a bushel when they can get approximately $1.35 for feeding it to pigs.

When this dangerous picture was presented to them, the Weatherproof Fibre Box Group went to work. It is a voluntary, unincorporate association, not for profit. The chairman of the Liaison Committee is P. A. Schilling of Waldorf Paper Products Co. Other members are J. M. Arndt, Gaylord Container Corp.; C. H. Carpenter, Kieckhefer Container Co.; Sidney Frohman, Hinde & Dauch Paper Co.; J. C. Helbach, Container Corp. of America; W. B. Jensen, American Box Board Co.; W. S. Snyder, Agar Mfg. Corp.; G. A. Vollmer, Atlas Box Makers, Inc.

Their recommendation to eliminate the sleeve on V-boxes was made after several weeks of preliminary testing which indicated that the carrying ability may not be impaired, but it is imperative that the box have four metal straps, two each way.

On the basis of 100,000,000 canned goods cases, this would mean a saving of 100,000 tons of board with an increase in use of between 7,000 to 10,000 tons of strapping and considerable money saving. Of course metal is short, too, but in view of the paperboard shortage, the WFB Liaison Committee points out that the swap of 10,000 tons of metal for 100,000 tons of board would be worthwhile under the circumstances.

Forty-one comparative drop tests were conducted on boxes received from 19 manufacturers. The boxes were taken from regular shipments to customers. The average test results follow:

COMPARATIVE DROP TESTS

No. of Groups	Type of Boxes	Caliper	Dry Mullen	Wet Mullen	Drops: Sleeves	Drops: Straps
20	V-1's	.111	857	631	16	19
21	V-2's	.106	669	549	14	18

The drop test was held after each box had soaked for 24 hours and then dropped from a 30 in. height so that it would fall on a corner. In most cases the strapped box withstood more drops than the sleeved box. (*Continued on page 108*)

Modern Packaging defers the All-America

★ ★ ★

Customarily the August issue of Modern Packaging carries the first announcement of the Annual All-America Package Competition. But there will be no All-America this year.

It was not easy to arrive at that decision, and with keen and sincere regret we make this announcement. During its 12 years, the All-America has become an institution of international scope. From its modest beginnings, when the entries numbered a thousand or so, it has grown in size to the point where the judges have had to pass on the merits of over 35,000 packages. Because of the influence of this Competition, interest in packaging has been extended to all lines of business that have tangible products to deliver to their customers. Packaging is no longer relegated to minor departments, but is now an important concern of top-flight executives who realize its full values in building and maintaining good-will. Then too, the concepts of what packaging really is have broadened as a result of the attention which the Competition focused on the subject. Instead of being regarded merely as a means of attracting favorable attention because of pleasing external appearance, the business world now knows that packaging also includes useful functions, chief among which are protection, economy and convenience. It is not too much to predict that as an outcome of future Competitions, the general public also will come to recognize in full those values which are inherent in good packaging.

As a result of this change in attitude on the part of business, packaging has assumed the status of a profession. It now commands the services of technically trained experts who are qualified to select and test materials by scientific methods, who are competent to engineer the structural features of packages so that they provide fullest protection and who can devise packaging lines and specify the equipment requisite to meet today's needs for high-speed production.

In the light of present circumstances, it is indeed fortunate that this is the case, for the needs of war call imperatively for scientific packaging. Packaging is assuming new forms, all designed to insure the safe delivery of subsistence and munitions to many far-flung battlefronts.

Of no small weight and importance in the growth of the Competition have been the standards for making Awards, the methods of judging entries and the composition of the Board of Judges from year to year. Selected for their expert knowledge of design, structure, materials, production requirements, merchandising and consumer preferences, the men and women who have acted in the capacity of judges have given unstintingly of their time and experience, and their composite viewpoint insures intelligent selection. Theirs is an important contribution to progress.

That progress is definitely measurable. It is to be seen in designs which have become more artistic and at the same time more sales-effective. It is evident in constructions which lend themselves more readily to the requirements of high-speed mass production, thereby passing on the savings to the buying public. It is manifested in devices which add to consumer convenience and re-use value.

To interrupt the continuity of an institution like the All-America is not a light responsibility. The discussions which led to the decision were long and serious. Not the least important consideration was the knowledge that many in the packaging field will experience a keen disappointment when this announcement is published, but we are confident that in spite of the disappointment, the decision will be approved when the reasons are presented.

Lack of packaging progress is *not* one of those reasons. Packaging has not stood still. It has made amazing strides, in the face of the most serious shortages of materials usually so plentiful that the packager has dozens of substances from which to choose. Particularly has progress been evident with respect to the function which all agree is now paramount—the protection of the product. The shortages have acted as an incentive to stimulate the development of new sheetings, new laminations, new coatings and new methods of fabrication. Used now mainly in the military field, this progress after the war is over will burst into its full bloom of usefulness for the benefit of the general public.

It should be said that this type of progress has been made possible at least in part because the unusual needs of the times have evolved a voluntary cooperative activity in our country, which is vastly more productive than the state-controlled industries of the Nazis. Our industries have proved that they can work with each other and with the government. And government today is industry's principal customer.

That is one of the reasons why there will be no All-America Competition this year. Uncle Sam has first call on all products—and there are very few he is not taking! He has called for new products and has made new uses of old products. What the goods are used for, how they are packaged and where they are going are sometimes important military secrets and the new packages introduced could, therefore, not properly be entered in a Competition.

Significantly enough, too, and more than ever before, a successful package today may be the outcome of intelligent teamwork between a dozen fabricators or producers of raw material, research laboratories, and packaging specialists just now turned government men. In that situation what a marvelous promise for future cooperative development is to be seen! Today this effort is being expended for the cause of war. Tomorrow it will be placed at the service of competitive industry for the benefit of the buying public.

Meanwhile, with one huge customer for virtually all industry, merchandising as ordinarily conducted is temporarily suspended. Brand preference is just as powerful as ever, but the goods simply are not there in many cases, and the customer takes what can be had. The situation has challenged the designer to retain important identity features in spite of drastic and enforced changes in package material. The designer has met that challenge in a manner that augurs well for future packages, but even he will admit that today packaging is not at its best from the standpoint of appearance. He is working now on package planning that may not be launched for years. Forward-looking package users are using designers in this manner today—but obviously what they are doing now couldn't be entered this year.

Another reason for our decision is the current shortage of manpower. Every business house has so many stars in its service flag that it is a tremendous responsibility to get each day's work done with the men who are left. What time have they to undertake to collect the full story of a new package,

which often involves a great deal of correspondence and research, in the face of other imperative tasks?

For another thing, the All-America, as can readily be believed, saddles a heavy burden on the mails and express lines. For months a stream of packages keeps flowing in. We are unwilling even to think about making this extra demand on services that are now so heavily taxed.

No small point is the using up of quantities of packaging material required to get the shipments to us safely. That material is seriously critical; there is not enough to go around for daily requirements. To put this added drain on our limited stockpiles is simply not to be thought of.

The products themselves, which are contained in the packages, are likewise scarce. In order to judge the adequacy of a package, it should be examined complete with its contents. But today, there are not enough products to satisfy imperative needs. We cannot sponsor a competition, or any other activity, which will even in the slightest degree aggravate those shortages of goods and materials.

These are some of the reasons which explain why we came reluctantly to the decision to defer the next All-America Competition until the war is over and packaging returns to its normal functions and patterns—or establishes new. Today's patterns are anything but normal. The manufacturer whose factory ordinarily can turn out goods in excess of demand is now running his plant overtime to meet war's insatiable demands. The hundred or more materials from which the packager can ordinarily select what he needs are today critically short. The merchant who usually can devote part of his time in developing attractive packages to help sell goods normally plentiful now spends days and nights to get merchandise to sell. The consumer who normally chooses favorite brands from loaded shelves now studies how to spread ration points over dwindling supplies of goods.

How can packaging be normal in the face of such conditions? How can industry—with a clear conscience—pay any attention to Competitions when every ounce of energy is desperately needed even to come close to producing enough goods for human wants? It is unthinkable.

Until a happier day, then, the All-America Package Competition is a war casualty. When that happier day arrives it will be resumed. As before, it will again stimulate individual enterprise to serve the public better through constant improvement of packaged merchandise.

★ ★ ★

Here are the kinds of packages needed for Victory—rations, drugs, foods, chemicals. Uncle Sam has first call on the materials, manpower and transportation facilities to produce them. That is why for the first time in 12 years there will be no All-America Package Competition for 1943.

Patterns for package planning

Is package development in any company a Topsy-like growth or is it the outcome of a systematic procedure?

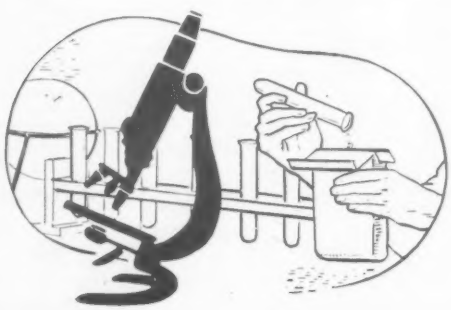
Both types of package development were disclosed as a result of dozens of personal interviews extending over a period of weeks. These interviews were with companies in many different lines of business and in at least eight different states. There is no uniform procedure; though the patterns resemble each other. For that reason it is impossible to reduce package planning to a blueprint. Nevertheless, there are definite package planning procedures followed more or less as a matter of course. Oddly enough some companies seemed unaware of their own procedure until they got down to discussing it. At least one interviewer remarked, "I never realized that we had such a definite program for taking the various points into consideration."

The points which most producers of packaged goods name as of vital importance are these:

1. Materials of which the package is made,
2. Structural or engineering aspects in fabricating those materials,
3. Functions which the package must perform,
4. Producibility of the component parts of the package,
5. Handling the package material on the production line,
6. Considerations of external design as a means of identity and consumer appeal,
7. Copy content, legal requirements, etc.

Obviously, not all of these points are of equal weight with any two concerns—the nature of the product is the governing factor. Equally obvious is it that in few organizations is it possible to obtain all the answers from one person. The requirements and experience of various departments must be coordinated. In some cases conflicting requirements must be compromised by a weighing of advantages and disadvantages. In plenty of cases, before a product is launched, its package must be tested from the standpoint (1) of its functional adequacy and (2) of consumer acceptance.

All of these points were thoroughly discussed. No formal questionnaire was followed; instead each case was treated —conversationally—as though an individual diagnosis were being made. Thus the background thinking was obtained in a manner impossible with a stereotyped form of question and answer. For similar reasons, instead of attempting to present the results in tabular form, certain typical companies were selected whose procedure is presented in outline form. By request, actual names are being withheld though the line of business of each participant is given.



A pharmaceutical manufacturer

This company's products, for the most part, are ethically promoted and distributed throughout the world.

Package problems usually originate with either (a) the Merchandising Committee, under the chairmanship of the Merchandising Director, or (b) the Medical Research Division under the chairmanship of the vice-president in charge of research.

The originating group transmits to the Package Specification Department the requisition for the new package with detailed information about (a) the nature of the product, (b) the desired sizes, (c) distribution facts, (d) special requirements. This information determines the function of the package and the Package Specification Department now undertakes the selection of materials and experimentation for structure. Experience at this point emphasizes the advisability of narrowing the selection down to as few concrete suggestions as possible before going the rounds of various groups, which is the next step in the procedure. These groups are:

1. The Medical Research Division,
2. The Production Committee,
3. The Executive Sales Committee (both domestic and export).

Each of these groups checks the proposed packages carefully with their own requirements in mind. Their suggestions are transmitted back to the Package Specification Department which now appears in a coordinating capacity. All valid suggestions, of course, are incorporated in the package which thus represents the composite thinking of the various groups. If necessary, the package at this stage is returned to the different committees for their second viewing.

Now the package goes to the Control Department, headed by one of the vice presidents. In this particular company this executive is a pharmacologist with a staff of pharmacists, chemists and technicians. The copy on the package is prepared in this department in accordance not only with the company's own requirements, but also to conform to legal regulations as prescribed by the Food & Drug Administration, the National Institute of Health, the Bureau of Animal Industry, the U. S. Pharmacopeia and National Formulary. There is no appeal from the decisions and considered actions of this Control Department.

The package is now ready for its external design and it goes to the advertising department for this. This department is responsible only to the management, but strangely enough

package designs produced by them do not have to run the gauntlet of various committees and other groups.

Fully designed and complete with its copy, the new package now goes back to the Package Specification Department where it is put into work by means of these steps:

1. Preparation of package specifications for:
   (a) Purchasing Department
   (b) Control Department
   (c) Production Departments
   (d) Cost Department

These specifications in most instances are accompanied by complete blueprints.

2. Preparation of instructions to Purchasing Department to make up standard stock cards for obtaining supplies.

After the first actual production run, samples of the new package are sent to the various groups and committees for their final approval.

Tests of the new package are conducted informally by their own sales organization. These take the form of interviews with retailers and physicians and, if desirable, by ultimate consumers. The principal objective is to determine the proper functioning of the package from the standpoint of its material and structure. In the case of some of their new products, before nationwide launching, they select a few test areas to obtain market acceptance as to the effectiveness of the new package.

A manufacturer of proprietary remedies

Similar in many respects to the foregoing, but with certain vitally important differences, is the package planning procedure of a proprietary manufacturer whose products are distributed nation-wide. The call for a new package comes when the Merchandising Department says, "We need another product." However, before anything is done on package development, a market study is made to determine the potential acceptance of this new product not simply from the viewpoint of whether there is room competitively, but whether the new item has a chance to dominate its field. This, of course, includes a study of the price possibilities. When those questions are answered, the Research Department undertakes the problem of developing the product after which comes the question of the package.

The package, in this company's practice, must revolve around the basic merchandising story. Hence the selection of a product name is of vital importance. Primary effort is to select a name with memory-value and at the same time one that lends itself to trade-marking. This question settled, the next step is to prepare the basic story which usually takes final form in a folder to be used as a package insert in which the emphasis is on the uses of the product and what it will do. The contents of this folder become the basis not only for the copy material on the package but also for the appeals used in advertising the product.

The selection of package materials is the next step. No attempt is made to develop "fancy" packages. The package, according to their policy, must do a straightforward selling job and must perform the all-important function of protecting the contents not only en route but also during its life with the consumer, for many of these products have a long consumer life. Some of the packages are equipped with devices to facilitate use.

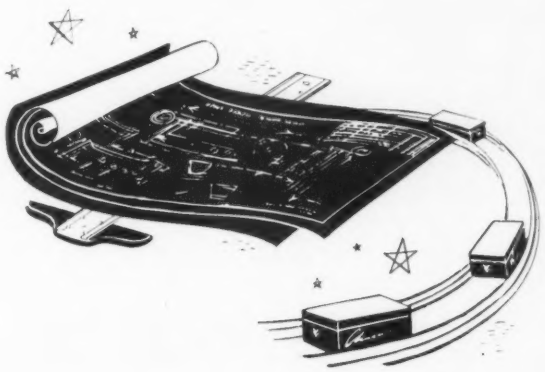
Important considerations in the selection of materials are:

1. Can the material be easily and economically fabricated?
2. Does it lend itself to large production?
3. Is it adaptable to smooth handling on machinery and equipment?
4. Does it afford adequate protection of product?

These points are all coordinated by one of the company executives who is in charge of package development, whose task also it is to say the final word as to the copy content, after due consultation with legal and medical advisors.

The question of design comes next. Usually this problem in its entirety goes to the art department of their advertising agency. For the most part, their products bear a family resemblance to each other in matters of color scheme and design. The final O.K. rests with the company president.

The package tests of this company are mainly market tests. So far they have not found it necessary to make elaborate tests of package materials, though they are aware of that possible need in the event of shortages becoming more critical. Their market tests, made in controlled trading areas, seek to determine the salability of the product and its appeal to the public. If—as has happened in their experience—a product does not find a ready market, they do not attempt to bolster it up by changing the package. The product, they say, must live or die on its own merits. To quote one of their executives, "We know when we're licked. If one of our products doesn't make its own place, we abandon it."



A meat packer

This company's main plant is located at the Union Stock Yards, Chicago, with branches all over the world. In addition to handling fresh meats they package a wide line of specialties, most of which are marketed through food outlets.

Calls for new packages originate in any one of several ways: (1) The Sales Department, for merchandising reasons, may call for a new product or a new package for an established product. (2) The Operating Department may call for a new package for reasons of economy, either of production or of material. Likewise, the Operating Department may want a package change for better adaptability to equipment, with or without the economy angle. Again, changes in plant design or operation may be of such a nature as to call for revision of a package.

All requests for new packages first go to the Label Committee, which acts in the capacity of a sort of umpire of package adequacy and the necessity for new packages. One of the functions of this committee is to syphon off "nuisance requests" which, because of their numerous branches and far-flung merchandising front, mount up to a considerable total. Not all of these requests are practical.

After an informal consideration of each request, the secretary of the Label Committee presents it in written form for more detailed investigation. This committee consists of the advertising manager, a representative from the legal department, the general manager in charge of production, the art director and the general sales manager. The last named has the final authority.

When a request is favorably passed on by the Label Committee, the Development and Standardization Department approaches the problem of functional or structural design which involves selection and testing of material. At the same time, by means of conferences between this department and the merchandising and operating departments, the question of costs and sizes are being settled. Cost estimates take into careful consideration costs and availability of materials in various quantities, the nature and cost of labor required, the cost of new equipment needed and the cost of changes in present equipment.

If the resulting cost figure comes out higher than is considered allowable by the merchandising department, an entirely new start is made. During these stages the Development and Standardization Department exercises the coordinating function.

These questions settled, the next problem to come up is that of external design. The sample packages which have been prepared by the Development and Standardization Department now go to the advertising and art departments who work in conjunction with the Sales Department. Their proposed designs go to the Operating Department for approval. This department has the final authority, for—because of the vast operations of this company—this central body is responsible for first, the uniformity of the package material, second, the necessity of the regularity of operations and third, the control of inventories in order to prevent obsolesence. Among points to be watched by this group are compliance with the requirements of such government bodies as the Food Distribution Administration and the Bureau of Internal Revenue. One matter of particular importance for packages in this field is, of course, non-toxicity of printing inks which must nevertheless manifest stability in processing to meet the hazards of shipments all over the world. Failure in any respect at this point results in the package being returned to the proper department where the deficiency is made good.

The copy on the package is to a considerable extent governed by the requirements of various federal bodies. Within those limits, the reading matter pertaining to the product and its uses is prepared as a result of collaboration between the company's art department, advertising department and advertising agency.

An organization as large as this one, with packages produced, handled and distributed widely, requires an unusual degree of "policing" of its packaging. Various measures provide this. For one thing, the secretary of the Label Committee must review all requisitions for labels and designs in order to prevent waste as well as to maintain uniformity. For another thing, the company constantly obtains samples both of their own and competitive brands from the open market in all areas in which they distribute. This is a means of checking not only the quality of the product, but particularly the adequacy of the package and the exterior packing from the standpoint of protection and sales appeal. A third means of "policing" is provided by their own force of traveling inspectors whose duties include the checking of stocks in warehouses and in retailers' hands to determine the general adherence to package specifications. Violations are reported to the central office where the errors are traced to their sources.

A paint manufacturer

Traditionally, paint had always been sold in metal cans with friction tops—some of the larger sizes equipped with bails. Labels were designed with the principal thought being given to identity of producer and specific color, kind and quality of product itself. Other items in the line, they said, were equally restricted to traditional shapes and sizes of packages.

The war's restrictions came as an incentive to research other than traditional types of paint packages. Now they find themselves developing a package-consciousness that is resulting in a definite packaging procedure. They find themselves evolving a pattern that will draw into the picture a number of departments that were not previously concerned with packaging problems. Particularly do they find that the development and packaging of some of their new products have served to unify their merchandising practices.

The practice they are setting up begins with merchandising. The first step is market study coupled with product research and development, which is carried to a high point of efficiency. In the case of one product, in order to obtain consumer reactions, they actually made field tests which involved the decoration of as many as 500 rooms in private homes. These tests, conducted prior to launching the product, determined its nature and package.

Entirely new materials for packaging, up to the present time, have not been subjected to anything more than experimental tests. Label designs are selected from a series of sketches which are developed by the advertising agency in conjunction with the company's advertising department. Paralleling the evolution of the package design, is the development of the advertising campaign. Sizes of packages are decided by the merchandising committee, but are limited by the capacity and facilities of their package-making equipment.

The executives now responsible for package development are looking forward to a more complete participation in their program by other executives in the company.

A producer of conserves and canned foods

This company's products are packaged in tin, glass and ceramic containers. In spite of doubling their production, the government is still taking the major portion of their production which, they say, is welcome because it makes unnecessary any rushing out of untried and doubtful packages.

Suggestions for new items and revised packages are reviewed by a board which comprises a general operating committee representative of management, sales, production and purchasing. This group meets daily when such matters are pending to investigate such points as: (1) correctness of their plant location, (2) available production equipment, (3) various types of packaging, (4) availability of raw materials, (5) general market conditions and salability of the proposed products. These questions must be settled prior to specific problems.

The structure, form and material of their packages, as already noted, is quite thoroughly standardized, therefore, no material tests have as yet become necessary. They are particularly careful in their selection of packaging material to preclude any loss of trade acceptance and good-will through difficult or troublesome containers. The products temporarily suspended will be reestablished as a part of their post-war program. Some progress has been made, but final decisions must await the end of the war. (*Continued on page 110*)

5 SYRETTES
1.5 cc. Size
POISON
Solution of Morphine Tartrate
WARNING: May be habit-forming
Needle Sterilized
An aqueous solution containing Morphine Tartrate ½ gr. per 1.5 cc.
Preservative: 0.4% Phenol.
DOSE: Adults, not more than one Syrette without medical advice.
ANTIDOTES: Keep patient awake but do not exhaust him; stimulate respiration; give strong coffee; wash out stomach.
DIRECTIONS FOR USE OF SYRETTE: Remove transparent hood, grasp wire loop and push wire in to pierce inner seal, turning if necessary. Pull out and discard wire, thrust needle through skin at least half its length and inject solution by slowly squeezing the Syrette from the sealed end.
U. S. Patent No. 2,218,201.
"Syrette" (Reg. U. S. Pat. Off.) is a trade-mark identifying collapsible tube syringes of Squibb manufacture.
E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858
Made in U. S. A.
FIVE SYRETTES
1.5 cc. Each
Needle Sterilized
Solution of Ephedrine Sulfate
An aqueous solution containing Ephedrine Sulfate U.S.P. 0.072 Gm. in 1.5 cc. of distilled water.
Preservative: 0.4% phenol
Dose: Adults not more than one Syrette.
Directions for use: Remove transparent hood, grasp wire loop and push wire in to pierce inner seal, turning if necessary. Pull out and discard wire, thrust needle through skin at least half its length, and inject solution by slowly squeezing the Syrette from the sealed end.
Keep in a cool place.
U. S. Patent 2,218,201
"Syrette" (Reg. U. S. Pat. Off.) is a trade-mark identifying collapsible tube syringes of Squibb manufacture.
E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858
Made in U. S. A.

Syrette, the self-contained, single dose, hypodermic unit carried by the medical corps. It consists of metal tube fitted with hypodermic needle and protected by transparent hood.

Medical packs help reduce war casualties

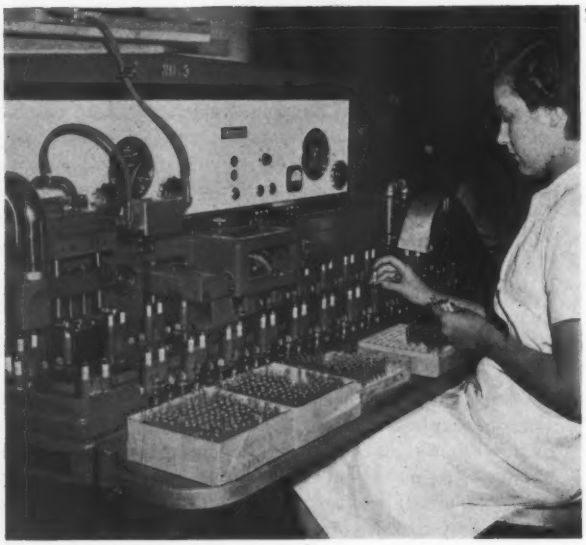
by Dorothy Guernsey

The amazingly low record of fatal casualties in this war—less than 3 per cent of the naval and marine personnel at Pearl Harbor died of their injuries, according to a recent OWI release—is due not only to the efficient organization of the medical services, which frequently reach a man within a few minutes after he falls on the field of battle, but also to the packaging of medical supplies which make them available for their use. Dried blood plasma and normal serum albumin (human) for the treatment of shock, the sulfa drugs which each soldier carries with him to combat infection, and many others are among these medical supplies. While the drug industry which makes these supplies, has not converted to 100 per cent war production, as have some of the other great industries of our country, for civilian health must also be maintained, a substantial portion of the goods turned out by most of the large drug manufacturers now goes to the armed forces and lend-lease—and many new and original products are being made exclusively for military use.

E. R. Squibb & Sons of New York, with laboratories in Brooklyn, N. Y., and New Brunswick, N. J., has several of these war babies, the entire production of which is taken for war services. These are morphine tartrate Syrettes,* normal serum albumin (human), ampuls of chloroform for "smother anesthesia" and ampuls of methyl bromide for delousing soldiers' clothing. All of them offered difficult packaging problems and all but Syrettes had to be solved after the war began, under the pressure of deadlines and the complications resulting from shortages of needed materials.

Perhaps the No. 1 Squibb war baby is the Syrette, a self-contained, single dose, hypodermic unit, carried by men of the medical corps and included in the parachutist's kit. Preliminary work was started on this product late in 1938, after the War and Navy Departments had indicated that the availability of such a unit was desirable. Just three years later Syrettes went into action at Pearl Harbor. From a small beginning, when most of the work was done by hand, Syrettes are now being turned out on several production lines. However, there are still not enough of them to provide any for the civilian services which are also anxious to obtain them.

* Trade name of E. R. Squibb & Sons.



The Syrette container, which was developed after literally thousands of experiments, consists of a small collapsible metal tube fitted with a hypodermic needle for the immediate administration of solutions of drugs, in the present instance, of morphine tartrate. The complete unit measures $2\,^{7}/_{16}$ in. in length and has a capacity of $1\,^{1}/_{2}$ cc.

Before use, the solution is prevented from entering the needle by a soft metal seal or diaphragm. The needle is fitted with a stylet of wire of such size that it will comfortably slide in the lumen of the needle and is protected by a transparent hood. To use, the hood is removed and the stylet pushed into the needle until it punctures the diaphragm, thus permitting the solution to flow into the needle. The stylet is then completely removed from the needle, the needle is introduced subcutaneously into the patient, the tube is compressed, and the morphine gives the patient relief from pain.

While the Syrette container looks simple enough, its development was one series of headaches after another. Difficulties were first encounterd with the making of the tubes, since they had to be sufficiently rigid to allow the nickel-plated collar of the needle to be put on and held by friction. Pure tin was found to be too soft and extensive experimentation was necessary to determine the alloy that would best meet the requirements.

Neck dimensions must be held to very close tolerance to permit ready and satisfactory attachment of the needle. The thickness of the sealing diaphragm must be held within narrow limits in order to permit easy piercing with the stylet. In drawing the tubes, the use of a special lubricant is held to the absolute minimum in order to avoid tube contamination and trouble in welding. Dimensions of the needle collar must be accurately held within narrow tolerances.

The tubes, needles, stylets and hoods are assembled by hand and, because of the small size of these pieces, girls with steady hands and keen eyes must be found to do the work.

1. ***This worker is assembling the tubes, needles, stylets and hoods. She is shown dipping the needles in a sterilizing solution.*** **2.** ***Another view of the assembly table. Here the worker is using the special device which attaches the needles to the tubes.*** **3.** ***Tubes are fed into this machine, which looks like an over-sized upright piano, where they are filled, bottoms crimped together, trimmed to make them even, then sealed by electric welding.*** **4.** ***Tubes are tested for leaks in semi-automatic tester.***

From the assembly table they go to the filling machine, an ingenious device, somewhat larger than a standard upright piano, designed by Squibb engineers with the assistance of the machinery manufacturer. In pairs, the tubes travel around a circuit on this machine. Under the first nozzle they are blown by a jet of dry, filtered air to remove fibres or similar accidental mechanical contamination. At the next stop, they are filled with the solution, then the open end is pressed together and about $^1/_{16}$ in. of metal sheared off to make a new and clean welding surface. Finally, they are electrically welded. At the end of the line, they are blown off on to a conveyor belt which runs down the middle of a long table.

At this table each tube is tested for leaks through the weld and through the needle in a semi-automatic tester, exerting a pressure of approximately 15 lbs. per sq. in. The hood, too, is examined to make sure that it is not on so tight that in removing it, the user might pull the needle from the neck of the tube. After they have passed these tests, the tubes are packaged in cartons of five, separated from each other by cardboard partitions.

Some idea of the work that went into the development of Syrettes can be gained from this extract from a paper prepared for the meeting of the American Pharmaceutical Assn. last summer:

"In order to reduce the number of leakers and to evaluate the various factors contributing to imperfect welding," wrote J. D. Hulsmann, Squibb industrial engineer, and F. W. Nitardy, vice-president, "we ran a great number of experiments using tens of thousands of tubes. We tried tin from different sources, various alloys, tubes drawn with different lubricants, tubes cleaned by an air blast, tubes cleaned with various solvents, tubes cleaned mechanically inside only, as well as on both sides, tubes handled with bare fingers and tubes handled only with gloved fingers; also tubes wet steam sterilized, tubes sterilized by dry heat and tubes sterilized and then wiped with white cotton. However, tubes just could not be heat sterilized and then welded satisfactoirly. We studied the behavior of filling-nozzles of different diameters, of differently shaped discharge tips and endings at different levels in the tube. In conjunction with the filling machine builder, we experimented with different carbon electrodes and a variety of electric hook-ups. Through all this we finally arrived at a satisfactory procedure."

Fortunately, this procedure was worked out before the present great need for Syrettes had developed.

One of the most recent of the Squibb war products is a "smother anesthesia" unit for use in tank warfare. When a soldier inside a tank is severely injured, the difficulties of removing him may cause further shock. To prevent this, he is now anesthetized before removal is attempted. The army had an idea of what was wanted and asked Squibb to make up and submit samples. After several starts—this time with a deadline constantly in the background—a simple unit was devised. It consists of an ampul, $2^1/_4$ in. long, containing 2.5 cc. of chloroform—the amount specified by the army—encased in a heavy webbing bag, sewed at each end. About one-third down from the top of the ampul there is a constriction. To use the unit, the ampul is broken at this point—it can be done with one hand—and the released chloroform saturates the bag which is then pressed to the wounded man's nostrils. Three of these ampuls are packed in a paper carton.

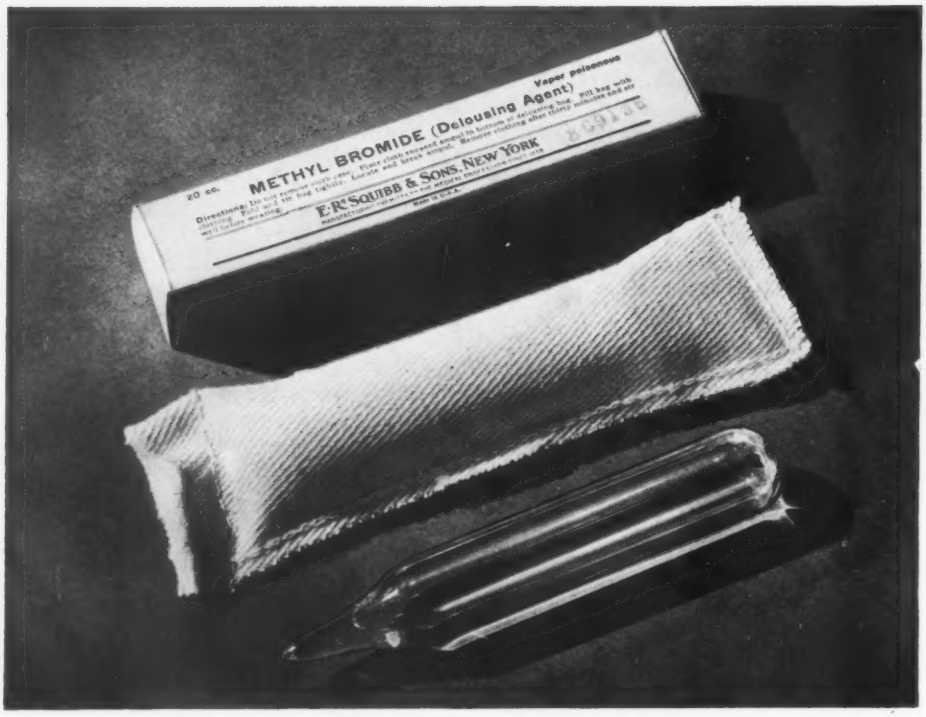
The navy, recognizing the need for the conservation of container materials, in some instances is getting entirely away from glass bottles with metal closures. Squibb, for example, is now packaging quinine hydrochloride tablets (for the treatment of malaria), sodium bicarbonate and soda mint tablets on orders from the navy in a paper mailing tube container with top and botton of non-critical metal. The tablets or powder are first placed in a cellophane bag and then inserted in the tube. In many ways, these containers are more satisfactory than the former glass bottles, for they will not shatter from gun concussions or break when dislodged or dropped, yet

5

POISON
CHLOROFORM SQUIBB
E.R. SQUIBB & SONS, NEW YORK
When necessary to produce unconsciousness for removal of severely wounded men from tanks, break ampoule and hold under nose. One ampoule will usually be enough; rarely two may be necessary. Use only sufficient amount to produce desired result.
Antidote: Artificial respiration; atropine or camphor hypodermically; amyl nitrite or ammonia by inhalation.

Ampuls of chloroform for "smother anesthesia." Ampul is encased in heavy webbing bag. Three ampuls are packed to a carton.

6



This ampul holds methyl bromide. Ampul is enclosed in heavy fabric bag. To use, ampul is placed in bottom of a delousing bag, filled with clothing. Bag is securely tied, then ampul is broken from outside.

they are strong enough to protect the tablets.

Of all the packaging problems which have faced Squibb to date, however—and this is also probably true of the other manufacturers who have handled the product—the ampuling of methyl bromide has proved the most serious. Methyl bromide is a highly volatile gas which is ampuled in liquefied form. While the ampuls are being filled, the methyl bromide must be kept at a temperature of 20 to 30 degrees below zero Centigrade and, once they are filled, the ampuls must be sealed with a flame. Added to this production difficulty is the nature of the gas itself. Prolonged inhalation even in very low concentrations produces nausea and dizziness and, of course, in its liquefied form at sub-zero temperatures, it will blister the skin. For these reasons elaborate precautions must be taken to safeguard the workers against spray and fumes.

In the early days, when none of the manufacturers working on the first rush order knew much about the product, for it had been developed by the army, many workers were injured. Yet these girls kept doggedly at their tasks and the first Squibb order was delivered as promised—in time, it was learned later, to make the sailing date for the invasions of North Africa.

Methyl bromide is the army's new weapon against that age-old enemy of man, the louse, which spreads typhus and other diseases, to say nothing of extreme discomfort. In North Africa and other fronts where lice abound, an ampul of methyl bromide is placed in the bottom of a delousing bag, clothing is piled on top and the bag securely tied. Then the ampul is broken from the outside and the fumes released thoroughly fumigate everything in the bag within 30 minutes.

Through the strenuous weeks of that first order—started from scratch and completed in 30 to 40 days—and the ones that followed, Squibb engineers worked constantly on this packaging problem, learning more about the product as the work progressed and improving the methods and machinery for handling it. Today this department runs as smoothly as any in the plant.

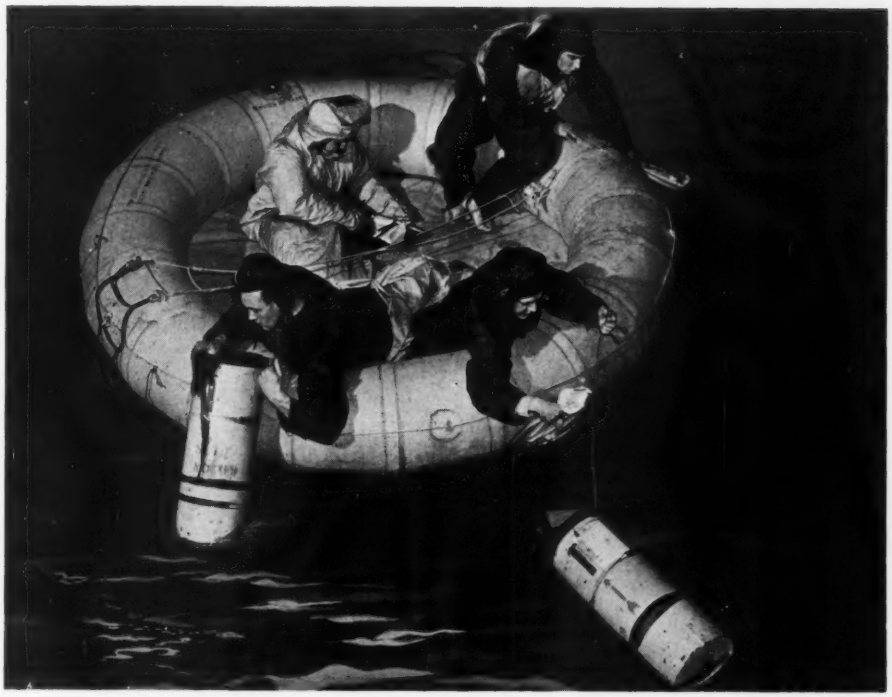
The ampuls—big ones holding 20 cc.—are delivered to filling teams in large cases packed with dry ice. These two-girl teams sit at a long bench to which the chilled liquefied gas is piped from the original containers. Each girl wears a celluloid mask and the one who does the filling has woolen gloves inside her rubber ones. In order to keep the workers' hands as far as possible from the liquefied gas coming out of the filling nozzle, the ampuls are constructed with long necks and the filling nozzle is covered by a long transparent hood. Other devices automatically collect the drippings and carry away the fumes.

In front of the other member of each team is a large, round, revolving drum containing dry ice (*Continued on page 106*)

These paper mailing tube containers with tops and bottoms of non-critical metal have been adopted by the navy for quinine hydrochloride, soda mint and sodium bicarbonate tablets. Note inner bag.

7

Millboard drums hold sea rescue gear



In a demonstration, these Canadians have climbed in rubber dinghy, dropped from plane, in center barrel of Lindholme sea rescue gear. They pull in food and clothing containers attached to dinghy by kapok floating line. One of the men is using a hand paddle, while the man in the center of the dinghy is wearing waterproof suit and is opening first aid kit.

Sailors and airmen tossing about on the Atlantic and Pacific off Canadian shores or shores patrolled by the Royal Canadian Air Force receive packages of aid and comfort from the sky when the RCAF aircraft sight them. The RCAF has adopted for use at its coastal command stations the Lindholme rescue sea gear and the Bircham barrel, two types of packs for those lost at sea, which have been developed in Great Britain as a result of the war.

The Lindholme gear consists of five cylinder-shaped millboard containers. Millboard is a heavy, groundwood sheet such as the heavy pasteboard found in the backing for books. The five Lindholme containers are linked together by 280 yards of floating cord, are painted yellow for visibility with waterproof paint and are sealed with rubberized tape.

The center container holds a self-inflating rubber dinghy, large enough for 7 or 8 persons, and is the largest of the five containers. It is closed by a lacing of string down one side. As soon as the dinghy strikes the water it inflates automatically. This is effected by a soluble plug, made of a chemical similar to aspirin, which dissolves immediately on contact with the water. When the dinghy becomes inflated, the container splits open down the laced side releasing the contents, and the dinghy floats on the water. The container measures 36 in. high by 14 in. in diameter and weighs full packed with kapok cord and metal container of carbon dioxide in liquid form for inflation, a total of $94\frac{1}{2}$ lbs. The other four containers of the Lindholme equipment measure 28 in. high by 11 in. in diameter. Each holds a smaller, but similarly built container, filled with equipment. These four barrels or drums are fairly evenly packed, each holding one waterproof suit and rations, with odd items distributed among them all. The idea behind this is that if one drum is lost, there will still be enough of everything for all members of the group.

Excelsior is used between the outer drum and the inner package for tighter packing. The reason that two containers are used is that should the outer one split when it hits the water, the inner one, which is held in place with straps fastened through slits in the sides of outer drum, will still be safe. Each of the four Lindholme containers weighs from 35 to 40 lbs. when filled. Unlike the drum for the dinghy, these are sealed with shellac to keep out the water. They hold clothing, food, comforts and warning signals. The food consists of tins of water, condensed milk, emergency rations, malted milk tablets, barley sugar, chewing gum.

The clothing is made up of four waterproof sleeping suits lined with goose feathers and 8 "everhot" chemical bags. Shaken with seawater and placed inside the sleeping suits, these bags dry out wet clothing and generate heat for four days. Signal equipment consists of four red smoke generators, floating lights with attachments to allow their operation as Morse code signals. A loud whistle is also included. Then, there are the comforts which comprise baling cup and sponge, first aid kit, cigarettes, matches in waterproof case and waterproof playing cards.

When a plane sights a party of men lost at sea the five containers are dropped from the aircraft like a group of bombs. The gear is dropped when the airplane is about 120 ft. above the water at right angles and downwind to the boat, raft or rubber dinghy. The airplane is throttled down to 145 miles per hour when it drops its load of containers, which are made to fit the plane's bomb racks and can be released as accurately as a "stick" of bombs. Dropping the containers downwind from the persons in the water makes (*Continued on page 104*)

Three lipsticks

Cases for lipsticks change quickly now, their makers using or adapting those materials which are most readily available. Pond's "Lips" appears in a new case made of paperboard and plastic. Top and bottom of the container are in a green plastic and give sturdiness to the case. The body is covered with a flower-printed paper to match the Pond's face powder box and the labels of the skin freshener and lotion bottles. It is a swivel type container and the lipstick itself is held in place by a tiny cylinder, the center seam of which uses staples made of paper instead of metal.

Chen Yu has a white plastic case decorated with embossing of flowers on the body part of the container. An original and clever device causes the lipstick to pop up ready for use when the container cap is removed. In the body of the case a spring has been inserted and to this attached a piece of cord. The cord is attached at the other end to the cap. When the cap is placed on the case, the spring is compressed by pulling the cord and allows the lipstick to fit down into the case. Upon the cap's removal, the spring is released and the lipstick is pushed upward. This device takes the place of the usual elevator.

A third new case is that for Elizabeth Arden. It is of cellulose acetate, using a combination of injection and extrusion molding. To keep the outer case from slipping off the inner one there is a tiny hump at the bottom. The container is of the elevator type and is of a delicate lavender shade. The plastic material has been faintly scented, adding to the fragrance of the product.

Design

Soup mix cartons

Long associated with breakfast time are Aunt Jemima and her pancake mixes. Now the Quaker Oats Co. has put the famous Aunt Jemima character on a line of soup mixes—mixes that are to be used by Canadians as well as people in the United States. So far three varieties are being packed—yellow pea, green pea and navy bean soup.

Instead of packing the mixes in envelopes or small packets, the company has put the mixes in small rectangular cartons, much like those in which Americans are accustomed to seeing pudding mixes and gelatin.

Cartons are made in two sizes—those for consumers in the United States contain five servings, those for consumers in Canada contain six servings. The front panels of all the cartons have the same treatment. There is the smiling face of Aunt Jemima, the kind of soup, number of servings, and company name. Side and end panels repeat the name of the kind of soup and the trade name. However, the Canadian cartons have both English and French language panels. Back panels contain directions for cooking and the Canadian ones have cooking directions both in English and in French.

Cartons are printed in red with orange, black and white lettering. The trade mark character is in full color. White spaces in various shapes placed in the centers of the panels make easy reading for the consumer and enable her to select the kind of soup she wants whether the cartons be stacked with the front panels showing or the ends or sides.

Fibre oil can

Another company to put oil in paper is the Valvoline Oil Co. Already this company has distributed a considerable quantity of the fiber 1-qt. packages in Pennsylvania.

Cans are spirally wound heavy fibre with fibre ends. There is a greaseproof liner on the body of the can and on the inside of the ends. Top and bottom are inserted discs. They are held securely in place by a special adhesive and the raw edges of the container are bound with paper. The top is scored in two wedge-shaped places, which permit opening with a regular oil can opener.

The label is a wrap-around, applied to the body of the container. There is no identification on the top and the bottom, but they are covered with a silver color paper to give the effect of metal. The familiar Valvoline label of the old metal can is retained for the new one of fibre. It is in shades of green, with the darker shade at the bottom and the lighter ones at the top. Lettering is in white, red, black and green. Two panels have brand identification and price. A third panel lists the offices of the company and has product identification.

An attempt has been made to retain as much as possible the character of the metal container and the result is effective. The fibre can is sturdy and appears efficiently constructed. It joins a number of other all-fibre containers which various oil companies have been using since the metal shortage has been acute. Continued usage will reveal what their place may be in the packaging field in the postwar period.

Histories

Anesthetic solutions

The nature of this product, essential to public health, and the fact that each individual dose is contained in a separate glass vial, made the conversion from a tin container an especially difficult problem. The contents of the package weigh a considerable amount and, unless the container is very strong, a great deal of breakage will occur. After many months of experimenting, a double reinforced, telescope-type chipboard tube with metal ends was found to be very satisfactory. Due to governmental regulations concerning the packaging of all drugs, it is necessary to have every container sealed at its point of manufacture and delivered to the ultimate consumer with the seal still unbroken. The new package is sealed by its own label, thus eliminating an extra operation in the process of production and assuring contents untampered with until the label is broken by the doctor. A line running around the container, just above the center, indicates to the user where the fibre can is to be opened.

The labels for the entire line of products manufactured by Cook-Waite Laboratories were in the process of being redesigned and the change to a new container proved the ideal time to introduce the new design. The label is greatly simplified both in reading matter and style and each product is distinguished by a different color. Both the new labels and new containers have received favorable comment throughout the trade.

Credit: Seeley Tube & Box Co., Newark, N. J.

Bushels of fresh-picked rhubarb are dumped into enormous vat for brisk washing prior to cutting operation by machinery.

Summer pies in winter

When rhubarb grows long and ripe in the garden, mouths water from thoughts of succulent, crust-brown pies. In Revere, Mass., one packing and processing concern foregoes the pleasure-of-the-moment by harvesting rhubarb, washing it, cutting it up into finger-long sections, packing it in sugar, freezing it, and holding it in cold storage until winter.

William O'Donnell of Suffolk Farms who employs nearly a thousand hands in his mass-production planting, reaping and processing farm-to-factory ventures, only recently thought up the rhubarb winter-pie process himself. Business is so brisk that New England jobbers have a hard time filling orders for the frozen product to bakery houses. Rhubarb pie in January appears to have tickled the American palate. On the market only two seasons, the O'Donnell pack provides rhubarb pie at any time in the year. Only local fruit is used. No Southern or Western rhubarb has been packaged there yet.

The process, from beginning to end, is as follows:

Fresh-picked rhubarb, crated in wooden bushels, is brought into the processing plant where it is first washed thoroughly in huge tubs by means of fresh water spurting down over the fruit through wide nozzles. The water hits the stalks at an angle, forcing them under successive spouts of speeding torrents of cold baths so that the rhubarb is finally driven to the end of the tub. Here, a moving belt dips down into the bubbling trough and picks up the long stems of cleanly bathed produce.

After a run on the moving belt, the rhubarb drops off into waiting bushels and is then hauled to a specially devised, motor-driven cutting machine. The long stalks are fed into the wide hopper mouth of the cutting machine and, as though so much hay was being cut by the blades of a mower, the rhubarb stalks are soon emerging from the bottom neatly cut into $1^1/_2$-in. lengths after a session with sharp knives in the rotating tumbler-barrel.

The cut-up lengths drop into waiting, 25-lb. capacity cellophane bags which have been previously opened and placed in corrugated cartons.

The packaged product is carefully weighed and when the desired poundage is assured, girl operators add sugar to the contents of cartons—4 lbs. of sugar to $23^1/_2$ lbs. of rhubarb.

The cellophane top is creased in place to form a tight seal against moisture, the four ends of the corrugated cartons folded down, and taped with binder cloth.

In this brief fashion, approximately 25 lbs. of fresh rhubarb have been washed, sliced and packaged in rapid, one-two-three order. The refrigerating operation is the single remaining step to insure a scientifically storaged product.

When the rhubarb has been double sealed, it is placed in a holding room where mechanical refrigeration keeps the temperature down to 32 degrees. The packaged contents remain here about two hours and are then placed in a refrigerating unit on a truck where the temperature also hovers at the freezing point. The truck hauls its refrigerated load to a nearby cold storage plant where final freezing takes place. Temperatures as low as 15 to 18 deg. below zero for as long as four to six hours are required to thoroughly freeze the fresh contents. After that, the rhubarb is placed in freezing-point stalls in the plant. Here it remains for as long as a twelfthmonth, if necessary, but usually only until such time as orders are placed by jobbers. Then the frozen rhubarb reappears as pie-fodder for bakery houses. Normally, the rhubarb does not emerge until the winter months, long

after the fresh crop has disappeared from the consuming scene.

The 25-lb. cellophane bags measure 25 in. by 11 in. and they are ordered double strength. The bag is really two cellophane bags in one, for greater strength and moistureproofing. These bags are held together at the top by tacking or sealing along the upper edges so that when the bags are opened, they open as one, enabling the sliced stalks to tumble in without any of them slipping down in between the double containers.

This double cellophane protection is also used because the action of the sugar on the rhubarb eventually reduces the fruit to a soft pulpy mass so that by the time it reaches the baker, he is dealing with a semi-syrup solution. Therefore, a leakproof, moisture-insulated container is necessary. The gusset-type bag fills out square at the bottom to fill the square dimensions of the corrugated cartons.

The inventive-minded processor has devised a simple wooden, smoothly sanded form which enables quick and accurate opening of these cellophane containers. The wooden form is shaped to the exact size of the cellophane bag and is secured firmly to an iron support which is bolted to the floor. The sanded form stands waist-high permitting easy slipping on of the bags. When the cellophane containers have been slipped over the form, the operator brings the corrugated box down over the cellophane liner and folds a 3- or 4-in. cellophane collar over the top of the corrugated container. This serves to keep the cellophane receptacle ready and open at all times to receive the stalks from the cutting machines.

The corrugated containers are (*Continued on page 110*)

1

2

3

4

1. Young Chinese run motor-driven rhubarb cutting machine. Garden fruit is placed in wide hopper and rotates in tumbler below where knives cut stalks into 1 1/2 in. pieces. 2. Women operators weigh out sugar in ratios 1 to 4, pouring 4 lbs. of sugar over 23 1/2 lbs. of rhubarb. 3. Outside, corrugated cartons are sealed with binder cloth and placed in holding room where freezing temperatures for 2 hours precede hauling by refrigerated truck to cold storage plant. 4. Double cellophane bags are opened over specially-built wooden form. Tops of bags are folded back over outside of corrugated cartons, which provides opening for insertion of rhubarb stalks.

Reclaiming drums

by Herman Lustfield

Reconditioning and repeated round-trips of steel drums—even those originally designed for single trip service (light gage metals)—seem to be the life-saver for a great many American industries depending upon the drum for shipment of their products. With the rigid allocation of new steel drums to military and lend-lease purposes, users are faced with almost insurmountable obstacles in obtaining sufficient quantities of drums to continue distribution of their products. To some extent shortages have been filled by the use of fibre drums, but for many purposes these containers—with all their improvements and advantages—are unsuitable. The wooden barrel, likewise, is being used and re-used as are fibre and steel drums, but in the last analysis, the re-used steel barrel seems to be the *pièce de rêsistance.*

A survey among drum users shows that they are spending more time and energy in promoting the return of their steel drum property. Through a decision of WPB, it has been determined that steel barrels may remain the property of the original packers and that title is not transferred with the contents. Therefore, the ceiling price established for used steel containers (about $2.72) is of no consequence when the packer "charges" his customer $4 or $5 for the container—with the obvious determination that it be returned. Some materials-users are eager to cooperate and systematically return the drums; others require considerable persuasion before they will comply. Users, frankly, would rather get back their barrel than collect the "charge" or "deposit" they require for the container.

Drums customarily designed as one-trippers are now making up to four trips, according to one of the large oil companies. The number of repeat trips depends, of course, on the distance, the contents and the use or abuse to which the drum is subjected. This firm maintains its own cleaning and reclaiming plants both on the Eastern Seaboard and at many points throughout the country. Some of the cleaning equipment is of an automatic nature. Returned barrels are inserted into the head of the cleansing machine line and emerge six minutes later completely sterilized and dry, ready to be lacquered and painted after inspection for material damages. Dents and breaks are properly cared for before the final finishing process is undertaken. The general policy is to use badly dented drums for "red" oils and the top-grade containers for the "white" type of mineral oils. An estimated figure of 75¢ per drum was set as the approximate cost of reconditioning a steel container by this organization.

This particular firm reports that its use of the wooden barrel is decreasing, owing to the scarcity of properly seasoned wood and the labor situation in the wooden barrel field. Fibre drums are used for asphalt and heavy greases but not for light oils. Of course no attempt is made to obtain returns of the fibre drums, it was reported.

Paint manufacturers have a more complicated problem. Many of them pack their product not only in large 55-gal. drums, but also in 5-gal. pails. Because of the weight of the paints, in some cases as much as 25 lbs. to the gallon, the pails must stand considerable hard use. In addition, one of the commercial paint firms reported railroads and other shippers are inclined to be careless, adding to the damage to the pails. While this ordinarily does not cause leakage, frequently the containers are so badly damaged that repair and reconditioning are discouraged. Some paint concerns, it appears, do not do their own reclaiming work and this adds substantially to the cost of the process. Many paint pails are not returned or, at least, not sent back so promptly as they should be. Re-uses of these containers for a wide variety of purposes other than paint containers have been found. Even a charge of a dollar per pail does not seem to be a sufficient incentive to encourage return, it was said. Fibre or fibre-and-steel containers are hard to use because of the previously mentioned weight of the paint. A 5-gal. container may weight 75 lbs. or more, which is beyond the strength of many of the ordinarily available fibre cans of the 5-gal. size.

Many firms are operating on a hand-to-mouth basis as far as their larger (55-gal.) drums are concerned. Were it not for the cooperation of their customers in returning drums promptly, many would be seriously handicapped if not wholly forced out of business.

Manufacturers of corn products—syrups and oils—are having no less difficult a time keeping up with their container requirements. In fact, for food products, the problem is even more complicated because re-use of containers for foods is generally discouraged. For non-food purposes, steel drums of the heavy galvanized variety can be successfully cleansed and sterilized, but re-use of even wood barrels for foods is not a general practice. Corn oil is transported largely in tank cars and, since it is somewhat restricted in use, presents rather less of a problem than the distribution of mineral oils.

The supply of reconditioned steel drums, however, is far from adequate to meet the demand, even in spite of rationing and allocations. Packers must consider the following points

when deciding whether to use the dwindling supply of re-used steel or to turn to alternatives in fibre-and-steel and all-fibre or wood: How efficient is the alternative container? Will it hold the product as satisfactorily as the steel drum and what are the price considerations? Some firms have had such satisfactory experience with the less-steel or non-steel container that they will hesitate to return to steel after the war.

Metal saving is an important consideration. A drum with fibre sides and steel top and bottom is said to require only about a third of the steel needed for an all-steel drum. That fact is frequently a deciding factor in the selection of this type of container if performance is adequate. Among the firms which have successfully saved considerable quantities of metal by the use of such containers are those which pack hot-pour products, such as asphalts and waxes. To use such products, complete destruction of the container is necessary to remove the contents. Obviously there is less metal wasted in a fibre-and-steel container than in an all-steel container that could stand but one trip. Customarily 28-gage steel is used for either the all-steel or the part-steel containers and the saving is well worthwhile.

While many manufacturers contend that there is nothing to equal the metal drums, makers of fibre-and-steel containers and of all-fibre drums stoutly defend their products for even such highly sensitive materials as sodium hydroxide and potassium cyanide. Attention has even been given the possibility of using fibre-and-steel drums for overseas shipment of motor oils, but, for the most part, the government and its agencies have been adamant in their insistence upon the use of all-steel containers for overseas. One of the reasons for this refusal to accept fibre-and-steel containers is the fact that most of the steel heads and bottoms must be either spun on or expanded into place. Because of such construction, the sidewall may be weakened at the point where the juncture takes place and thus allow a possibility for seepage and loss of product. Most fibre-and-steel drum manufacturers say that their particular method of applying the heads and bottoms does not weaken the sidewall, but there are others who will sell their drums only when intended for use for dry and semi-solid products. They insist upon recommending inner coatings or liners for liquids and semi-liquids or, at best, do business on a basis of "caveat emptor" when anything but dry products is packaged. Re-use of the fibre-and-steel drum depends on what product is first packed in it and on what is to be used in it for subsequent trips.

There has always been a certain amount of re-use business in the shipping drum field—doubtless originating with the re-coopering of barrels in "the good old days" when every large user of barrels had his own cooper shop. With the advent of the steel drum, following World War I, greater re-use possibilities were foreseen and some of the larger users, particularly the oil companies, established their own equipment for reconditioning steel drums so that they could get from one to possibly a dozen additional trips out of the same container. Return of the drum to the plant was assured either by the establishment of a deposit system for the drum or by actual cash payment for its return. A few dealers in drums came into being, buying used drums, reconditioning and then selling them to original packers or to others who wanted a cheap container.

Some consumers protest violently against the necessity of returning drums, because, it is said, they have been getting a better price from the second-hand dealer than their allowance amounted to from the original packer. Competition, therefore, has caused some of the original owners of the drums to begin paying "ceiling prices" for the return of their own property. This sometimes results in a situation wherein the packer will pay almost as much to get back his own drum for re-use as he originally paid for it.

For example, one packer said he was paying his customers as much as $1.35 for the return of a drum, then paying the reconditioner an additional $1.60 (including haulage, etc.) for his work, whereas the price of a new drum is only a little more than the total of this reclamation cost. This example is not intended in any way as a price quotation, but rather to indicate the urgent need of getting back every drum no matter what the cost.

One of the principal objections to the whole business of return and re-use of drums is the infinite amount of additional bookkeeping required. Many consumers have vociferously protested against returns, but today it is fast becoming a question of returning drums or receiving no fresh goods.

Many drum manufacturing firms now finding themselves hampered in getting the materials for manufacture, have converted their facilities and (*Continued on page 106*)

TEN WAYS TO SAVE DRUMS AND BARRELS

To permit the continued delivery of essential chemicals and similar products, the Chemicals and Containers Division of WPB has set up a decalog of suggestions for distribution to large users of drums and barrels. The statement, issued recently by the WPB, urges that this request for prompt returns be heeded by users of steel drums, fibre drums, slack and tight wood barrels as well as cylinders. This applies, it is said, to containers even though they were customarily considered non-returnable. Refunds and payments, of course, are generally made without much difficulty.

1. Have suppliers pick up empty drums when making new deliveries, or return empties to warehouses from which they were received.
2. Do not use pressure to empty drums.
3. Drums should be kept clean, but do not rinse.
4. Do not use for storage or shipment of other material.
5. When returning drums, see that both bungs are replaced and securely tightened.
6. Do not interchange lids or lever-locks, but be sure that locks are returned.
7. Avoid stripping threads by using proper size valves.
8. Do not tighten bung plugs excessively as this may rupture flange threads, or loosen the spud, ruining the drum.
9. Use the properly threaded faucet or spigot; provide it with a resilient gasket. Tapered-thread faucets may turn the spud and cause leakage.
10. Store drums under cover to avoid rusting.

PACKAGING PAGEANT

1 A bird-house of paperboard holds three Peggy Sage nail preparations. The individual bottles are not new, but the carton with song-bird decorations in blue and pink gives them a fresh and interesting appearance.

2 A round plastic powder shaker for Mary Chess, Inc., has been replaced by a set-up box with a cleverly designed shaker top. The shaker device consists of a small piece of porous fabric inserted in the top. The fabric-covered opening has a tiny cover with a ribbon pull for easy removal and reclosure. Box made by The Warner Bros. Co., Bridgeport, Conn.

3 C. S. Taylor & Co., Davenport, Fla., have patented this container for their product, Orange Blossom Honey. An orange made of a special pottery-like composition holds the honey. A cork in the top is easily removed and an orange leaf forms the pouring spout. The container may be used on the table as a dripless server..

4 Green tea carton for lend-lease has a front panel which shows the American flag and the description, "Tea Coming from the U. S. A." On side panels are pictures of the Statue of Liberty entitled, "The Statue of Liberty in the Port of New York—Symbol of Friendship." These messages are shown on alternate panels in French and Arabic. The tea is distributed through lend-lease channels in North Africa. General Foods Corp. packs the tea for the government. Carton made by Robert Gair Co., Inc., New York City.

5 Five or six years ago, even before the necessity for conserving metals, Sudbury Laboratory, South Sudbury, Mass., began packing two of its products in cone-shape containers. The products, Pussy Scat and Chaperone, are designed to keep pets away from furniture, from clawing favorite rugs, etc. Unlike some of the more recent developments in cone-shape containers, these do not have a separate cover, but are designed so that the film over the top is pierced in order to dispense contents.

5

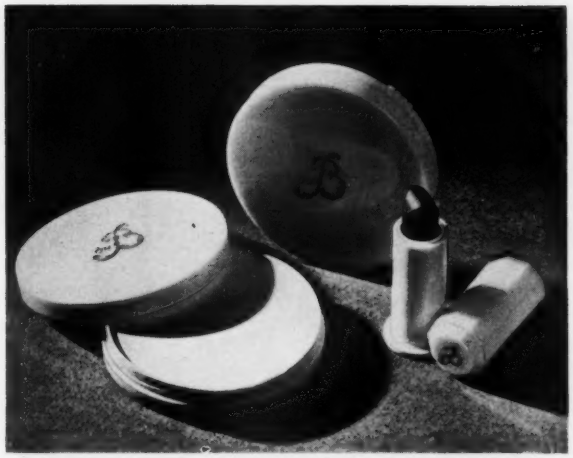
6 Planning for the future has made it possible for Richard Hudnut to place on the market at this time a powder-cake make-up in a pink plastic case. Several years ago, Hudnut realized that they would have to develop a long range program. As a result, they now have cases of cellulose acetate in which to present their DuBarry Beauty Cake.

7 Bottle replaces former can for Co-Re-Ga, the Corega Chemical Co.'s dental adhesive powder. The bottle proves a good substitute for the can, since the product is used in the bathroom and is frequently placed on wet surfaces. The bottle is sealed with an attractively decorated cap. It has a perforated inner seal so that the powder may be sprinkled onto the denture. Bottles, Fairmount Glass Works, Inc., Indianapolis. Caps and inner seals, Ferdinand Gutmann & Co., Brooklyn, N. Y.

8 Insecticide powder for body crawling lice is being packed by McCormick & Co. of Baltimore in an all-metal container, similar to the pre-war small spice can. It has a black iron body and ends made of scrap tinplate. Both the army and the navy have accepted the package as standard for the insecticide powder. Cans made by American Can Co. New York City.

9 Emergency drinking water for use in aircraft life rafts is provided by the army and navy in sealed cans. The container is a standard seamless cone top can, which holds about 11 ounces of distilled water. A metal tamper-proof seal is used on each closure and the closure is removed by a lifting lever.

6



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1. *Industrial thermometers are first protected by cushioning of shredded bank notes—trimmed scrap when such documents are printed that makes good shock absorbing material. Then they are wrapped in flexible corrugated and sealed with kraft gummed tape.* 2. *These packs are placed in shipping container with several inches of excelsior all around.*

Shredded bank notes and excelsior preferred

This is an era when protection means everything in packaging. It may be protection against moisture transmission, corrosion, infestation, light, heat, cold, submersion or a dozen other things. Sometimes it is solely protection against shock to prevent breakage.

Among the thousands of items being shipped to the armed forces and to war plants are hundreds of products so fragile that an unprotected drop of a few inches can damage them beyond use.

The best way to find out how to pack and ship such products is to go to the plants where such problems are all in the day's work. One such company is the Taylor Instrument Companies of Rochester, N. Y.

If you have ever held a slender glass fever thermometer in your hand to shake down the mercury, you can appreciate the importance of protecting such instruments against shock in shipment.

Taylor has been making thermometers since 1851, when David Kendall, son of America's first thermometer maker, and George Taylor, set up a shop in Rochester. When they had made enough thermometers to fill a good sized wagon, they went through the countryside to sell the load. Since that time, the products made by this company have increased from simple thermometers and mercury barometers to thousands of different temperature, pressure, rate of flow and liquid level and meterological instruments as well as a diversified line of instruments for medical diagnosis and treatment. Today, you will scarcely find an industrial plant, a ship, a plane, a laboratory or even a home where you will not find some kind of Taylor instrument.

The backbone of the protective packing for these products is excelsior and shredded bank notes—scrap trimmed from the edges when bank notes are printed and which can be purchased very cheap. Packaging experts galore have been called into conferences by Taylor, but to this day no one has found other materials which provide the proper cushioning for these delicate instruments and at the same time meet all other requirements of the company's packing problems.

Said Larry Greene, the company's shipping manager, "After you have visited our shipping department, you can see why this is true."

The packing of these instruments is virtually a custom packing job. Aside from civilian consumer products, such as household thermometers, barometers, etc., production of which has been curtailed by war production, the packing of Taylor instruments is a pretty specialized operation.

For example, one type of industrial thermometer may have a stem five inches long. An order may be for several dozen of

these. The next order may require packing for an industrial thermometer with a stem 12 feet long. Obviously, the two types require different size shipping boxes and different interior packing.

Many times, the company has a special order for just one instrument of a kind made to specifications for a laboratory, an industrial plant or a meteorological station. Standardized methods of packing for such equipment would be of no help. Therefore, the company must use materials which are flexible enough in their use to be adaptable for every occasion.

Contractions in the bores of some thermometers are only one 40,000th of an inch across. Twelve of such bores grouped together have a diameter no greater than that of one human hair. Thermometers which register both minimum and maximum temperatures are equipped with tiny filaments of glass like a hair, inside the mercury tube, which makes this registering possible. Even a slight shock to such equipment can make them inaccurate or render them unusable.

However, with proper protection, hundreds of thousands of such instruments are being shipped safely to their destinations. The secret is careful packing for each type of instrument, done entirely by hand by experienced workmen who spend many years learning their trade. Both Mr. Greene and William Colton, the packing engineer, began as packers on the line themselves and many of the men are old timers in point of service.

The company has occasionally made free test drops of their packages to determine the effectiveness of the interior protective packing, but this is not usual procedure. In most cases, the shipping department is assigned directly to the job of packing a particular production run. From their years of experience they know pretty well what is required for each item.

The underlying principle is to provide proper shock absorption through sufficient cushioning. Every item is placed in its container with sufficient excelsior, shredded bank-note paper, or both, to hold it snugly in position, yet at the same time to give it sufficient play so that it is not held rigid in its container. Rigidity spells disaster. As long as it can move sufficiently in its soft bed of packing materials, an instrument does not break, say these experts. It is most important that this packing be of equal thickness on all sides of the instrument to be packed. A careless packer, who allows the excelsior to be thinner at some points than others, courts disaster for the contents.

On the day Modern Packaging's representative visited the Taylor Instrument plant, a large order of industrial thermometers was being packed. They came to the shipping room over a gravity conveyor from the production floors above, where each had first been packed in finely shredded bank notes about three inches thick all around the instrument. Then each was wrapped in flexible corrugated and sealed with gummed kraft tape. In the shipping room, these wrapped packages were put into shipping containers of wood completely lined with about four or five inches of excelsior on all sides. At each end of the wrapped thermometers was placed an additional quantity of excelsior. This, Mr. Greene said, was to give added protection in case the stem or top of the thermometer worked itself through the other packing. Excelsior is somewhat stronger than the shredded paper, and therefore would prevent any possibility of the

3. *In these cartons are 12 compasses for soldiers. Cartons are placed in large wooden shipping box lined with weatherproof paper and about 2 inches of excelsior all around for protection.*

ends of the instrument working themselves out of position where they might hit the ends of the box.

Just before the boxes were ready to be closed, one of the workmen placed a printed slip into the case. On it was reproduced an animated drawing of a thermometer with a caption, "I may have been broken in transit," followed by this printed statement:

"I was OK when I left Taylor's—but shock due to rough handling may have broken my glass tube where you can't see it. If so, you can collect from your carrier only if he has the chance to examine the cases, cartons and packing. So, save all cases, cartons, packing, etc., until you've carefully followed the enclosed instructions."

This might appear to be a somewhat negative approach for such careful packing, until you know the story behind it.

It seems that Taylor has been shipping industrial thermometers in this manner for years with scarcely any breakage, but every once in a while something goes wrong. Because of the construction of the instrument, the glass tube being encased in metal, you can't tell until you use the instrument whether or not it is broken. By that time, all packing material is usually thrown out, and it is very difficult to determine how or where the breakage occurred.

Not long ago, Taylor made several shipments of these instruments to a company in New Jersey. Everytime a new one arrived came the same complaint that the instruments didn't register properly. Examination showed that the glass tubes were broken. Taylor couldn't believe it was the fault of the packing since similar shipments were going to all parts of the country with no complaints. To determine where the trouble occurred they sent one of their men to accompany the shipments to New Jersey. He observed every step in the handling all the way. Not until he reached the destination in the purchaser's plant did he discover where the trouble was. Here, careless workers ripped off the tops of the boxes, tore the thermometers out of the packing with such force and abandon, that they were broken right in the plant of the company which had purchased them. By instructing the receiver to save the packings and take the thermometers out carefully, breakage from such rough handling has been prevented.

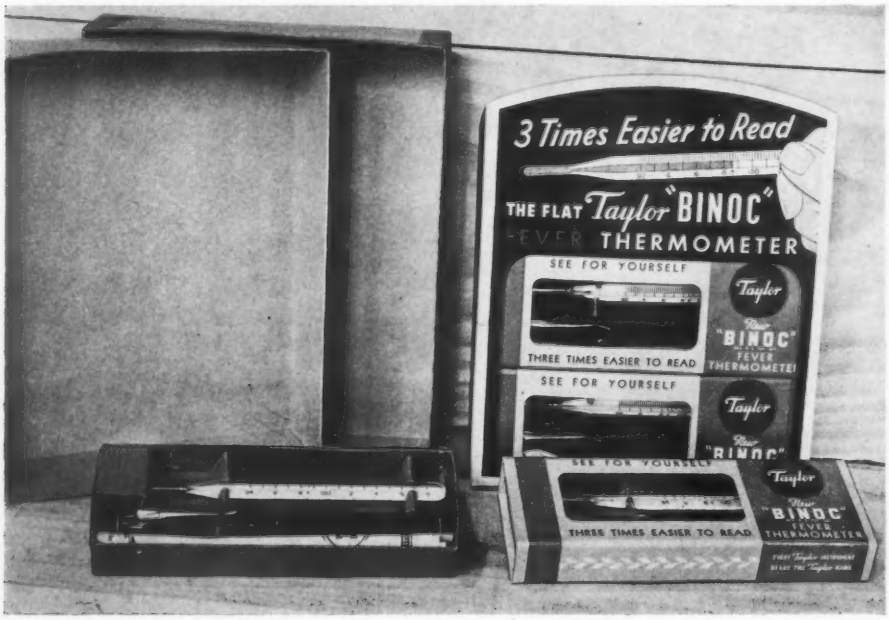
Household thermometers and barometers, fever thermometers and other products packaged for civilian trade are put into specially designed cartons which hold them securely in position. An example of how they are shipped may be gained from an example of pocket compasses, going through the shipping room on the day of Modern Packaging's visit.

These compasses for soldiers are mounted in the top of a plastic box which has a compartment in which to keep matches dry. Taylor is packing them in small paperboard cartons, then in units of twelve to a larger carton. These cartons, totaling several thousand compasses, are then placed in a large wooden shipping box made to government "specs" with a lining of weatherproof paper. To provide proper shock absorption for these little instruments, however, the entire wooden box, which is about four feet square and four feet high, is lined with excelsior about two inches thick.

The company buys large quantities of corrugated containers of all sizes made to its requirements, but has its own wood working shop for the construction of wooden containers.

After the war, they expect to review their entire line of consumer products to provide greater eye appeal. This project was started with fever thermometers before the war. From a protection standpoint, it is perfectly satisfactory to package such instruments in their plastic pocket cases in a slender folding carton. Cotton in the bottom and top of the plastic container provides sufficient cushioning to keep the thermometers from breaking. However, the company discovered that the public likes to see what it is buying. If the thermometer is in its pocket-carrying case, it must be removed when the dealer shows it. Therefore, Taylor devised a window carton in which the thermometer is secured in a die-cut platform and may be seen through the window of the carton beside its case. This makes an excellent counter package and also reduces breakage in the dealer's hands, since he does not have to open the carton or handle the thermometer to show it. It is also cleaner, since it eliminates handling of the thermometer.

Further developments of this nature, however, will have to wait until after the war, because the greater percentage of the company's facilties are now engaged in war work.



4. Because the public likes to see what it buys, Taylor devised these window cartons for fever thermometers. Thermometer and case are secured in box by means of die-cut platform. Dealer may display unit without handling product. Possibility of breakage is minimized.

Seeds must sell themselves

No Powers model was ever reared and groomed with more care than an ear of corn or a cauliflower destined to be photographed in color to illustrate a package of seeds.

In several gardens throughout the country right now, corn is being grown specifically from the seeds of certain growers. When it is ripe the golden ears will be picked and rushed garden fresh to a photographic studio. When the color cameras click, photos of the actual yield will be recorded for lithographic reproduction on the package for the gardening public.

Previous to the use of the color camera, such reproductions were made from glorified artist drawings. In some cases the latter are still used, if the subject does not lend itself well to photographic illustration.

Sometimes arrangements for this horitcultural venture are made by the lithographer who is printing the packets. This is particularly the case when the lithographic work is done a long distance from where the seeds are produced. This procedure assures fresh produce for photographing, which would not be the case if the vegetables had to be shipped a long distance to a photographer.

Seeds must sell themselves by pictures. Only by a picture can the purchaser of a packet of seeds know what variety of plant and product he can raise. Such pictures must be glamorous—with plenty of "come on" when sold in competition with other varieties. At the same time, they must be realistic—must show as nearly as possible what the seeds will do under careful growing conditions.

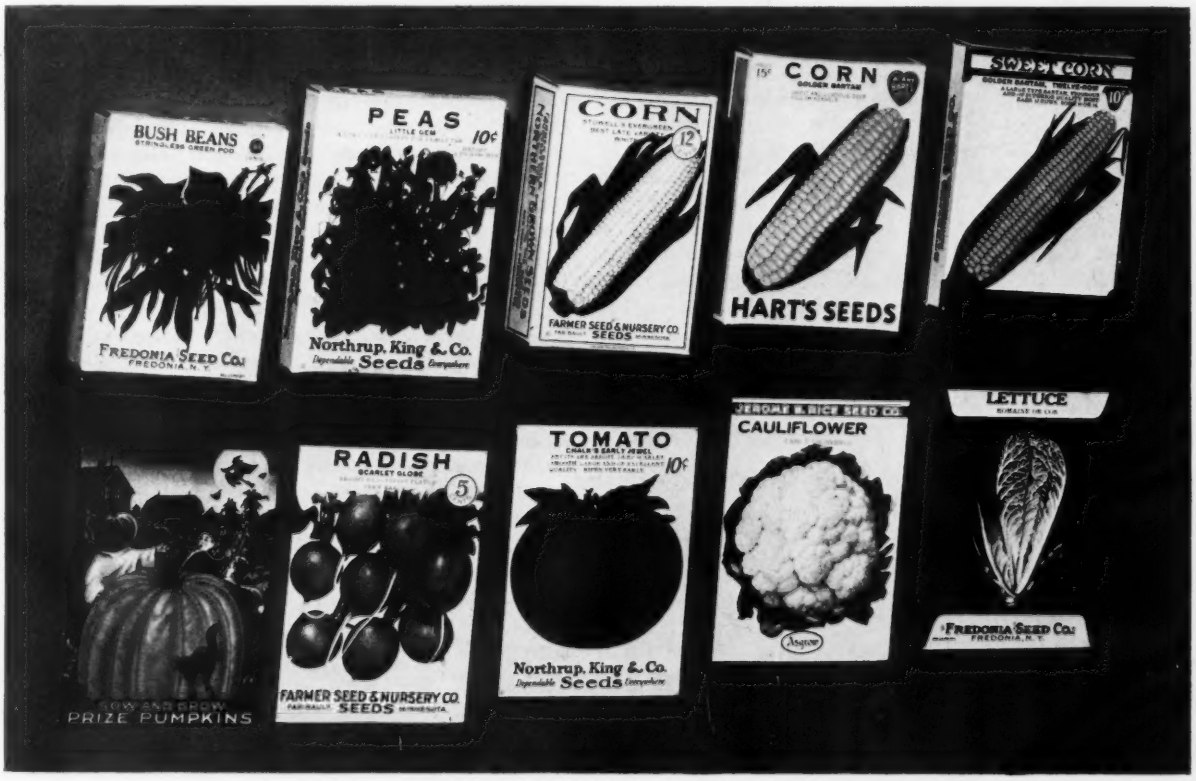
Color photography makes it possible to illustrate many varieties with an accuracy and brilliancy of color as never before.

These are the kinds of pictures which this year have helped to inspire the planting of some 18,000,000 Victory Gardens.

Most seeds for retail distribution are sold on concession. They are placed in display racks in grocery stores, variety stores, hardware stores, feed stores, pet shops and department stores. Even gasoline stations in some sections are selling seeds this year. Usually no sales person stands by to push the sale of the packets. The gardening public buys seeds because of the attractiveness of the package and the way it is displayed. At the end of the season, the concessionaire must pick up the unsold seeds. Therefore, it is to his advantage to present them so enticingly the shopping public will not pass by.

Due to the national food emergency, there was little sales resistance this year among dealers. Retail outlets, because of the wide interest in Victory Gardens and because of shortages of other kinds of merchandise clamored for seed business. Packers of seeds were thus able to give them the

Most seed producers favor the standard type packet shown below which carries the required quantity for the average size garden and lends itself best to display cases. Folding cartons have been adopted for bulkier seeds.



Victory garden collections contain several varieties in large envelope. Some growers contend these are not too successful because average gardener prefers to make his own selections, even though it offers an attractive buy.

best packages and displays which years of experience have proved to be the most successful methods of handling seeds.

Like the packaging of many other types of merchandise, the seed packet came into popularity as a convenience to relieve retailers of a handling problem. Such prepacking eliminates waste and saves labor. At the same time, it was discovered that it also provides a method of selling that requires no sales person in constant attendance. Display packets have become more and more appealing. Cultural directions and descriptive matter on the packages are of considerable assistance in planting. Because a person who buys seeds must rely entirely on the appearance of the package and the integrity of the company supplying the seeds, every company is anxious to have his packages fresh and clean-looking in appearance. Some companies even date their packages to assure customers that the seeds are fresh.

Packets for the most part are of a conventional size—about $3^1/_2$ by $4^1/_2$ in. The contents are usually planned in accordance with what has been found to be the required quantities for the average garden. Such packets are planned to give the greatest display value in allotted display space, since many stores are particular about where seed display stands are placed and in the past have relegated them to unimportant spots unless so designed that they would fit in small space which could be spared in strategic locations.

For bulkier seeds such as corn, peas and beans, more and more companies have adopted a folding carton package during the past few years. This is illustrated in the same colorful and accurate manner as the envelope packet, contains descriptive matter on the back, but makes a sturdier pack for heavy seeds or seeds with sharp edges which might cut through the usual packet and thus cause loss through tearing.

To modernize the designs on the packets or to enhance the color illustration, many houses have selected lithographed treatment with a black background. This is effective in making the brilliant colors of the vegetables or flowers stand out against the dark background.

Seed packets or cartons are in such way treated to make them moistureproof or air-tight. For usual retail selling, this is impractical. Seeds must be allowed to breathe and, therefore, should be packed where they are in contact with usual atmospheric conditions. However, they must not be subjected to extremes of heat, cold or moisture—since this would be ruinous to any living matter, even in a dormant state.

Lithographers, generally, like to produce seed packets since it is a steady business which goes on from year to year. Most of next year's packets are already being printed and it is expected that there will be little change in the types of these packets, except for revisions in directions and possibly a wider use of color photography.

About the only innovation in seed merchandising is the packing of a number of varieties in a single large envelope. This collection has been called a Victory Garden package. There is considerable argument as to the value of this, however. Some firms favor it as an economical, sales unit, offering the public an attractive buy for the money. Others do not think it is a good idea because such packets do not fit in the usual cases and can only be sold on the counters of some variety and chain stores.

This reaction to it was summed up in the words of one important seed grower, who wrote as follows:

"The average gardener, Victory or otherwise, prefers to make his own selection of the varieties of seeds he wishes to buy and plant. We feel that it is a waste of seed, as well as money, for buyers to purchase a collection, because such collections usually contain varieties the gardener does not want. Most buyers prefer to buy what they want in standard packages and, compared with the collection method, can make a substantial saving. When seeds are in short supply, we believe that no inducement (*Continued on page 104*)

Color photos are favored for Victory Garden posters.

Plywood treasure chest for Uncle Sam

So far those interested in plywood for civilian packaging have only been able to look wistfully at these developments. Resinous compounds used as bonding agents for this many-purpose material are so critical, they have been permitted for only the most essential war packaging uses.

Among these uses is the army's new plywood box used for shipping smokeless gunpowder from explosives factories to shell-loading plants. Some day the construction advantages of this container will be an important addition to the roster of supplies for civilian packaging purposes, particularly for powdery substances, where dryness, space-saving, lightness and durability of containers are essentials.

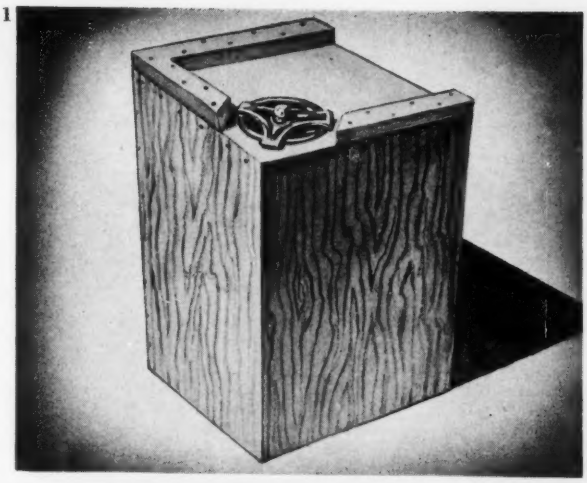
The box was developed by the plywood manufacturer in collaboration with the Army Ordnance Department. The purpose was the construction of a smaller, lighter box that would save copper and tin. It is made of plywood bonded to metal. It is fabricated in a specially built plant where women workers assemble paper-thin sheets of non-critical alloy steel and the plywood box walls.

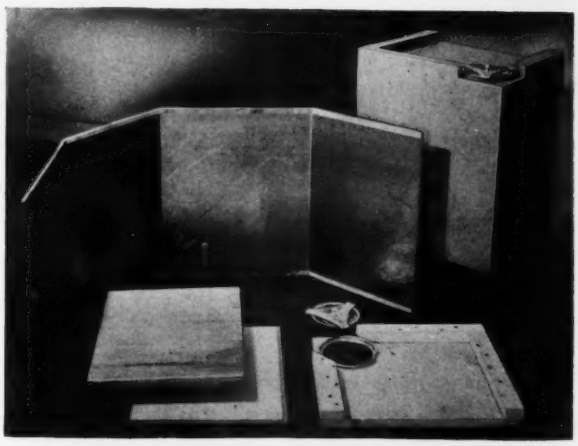
The metal and plywood sheets are then placed in special presses where they are bonded together with a special type of adhesive. The combined sheet thus formed is then scored and folded with the metal side inward. Tops and bottoms are fitted to the side panels and soldered to form a tight seal. The top of the box is reinforced with lumber cleats. A metal friction closure is provided for easy dispensing. The box has a capacity of about 3 1/2 cu. ft.

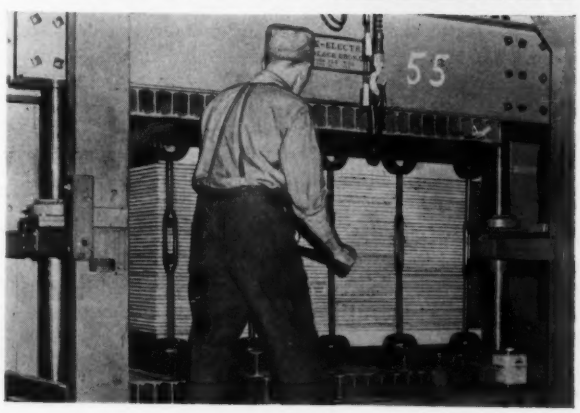
The box is said to be one-third more compact than the old type gunpowder box. It holds the same amount of powder yet saves enough shipping space every month to free 23 forty-foot box cars, according to a record chart kept by the manufacturer. Because it is one-third lighter, it is said to eliminate 1,508,000 lbs. of dead weight hauling every month—or 377 two-ton army truckloads. Because it requires only thin sheets of non-critical alloy steel, these new boxes save 732,000 lbs. of copper every 30 days. This amount of copper would be enough for telephone wire to girdle the earth 3 1/2 times. The boxes save enough tin to produce 690,000 No. 2 tin cans—enough to supply the canned food needs of a good-sized town for a month.

The outstanding characteristics of this container are thus lightness and space-saving with even greater strength, it is claimed, than boxes made of other materials. These advantages, made so necessary today by the shortage of transportation facilities and labor, will be equally important in the post-war period, particularly for air cargoes where lightness of packaging materials is one of the first essentials.

Credit: Box by United States Plywood Corp.







1. ***New plywood box for smokeless gunpowder is one-third more compact than its predecessor but holds same quantity.*** 2. ***Plywood is bonded to metal which forms inner liner.*** 3. ***Women operators assemble paper-thin sheets of non-critical alloy steel and plywood box walls.*** 4. ***Sheets are placed in press where they are bonded together.***

Pack adopted by the navy. Shown are the two parts of the dye marker—the outer waterproof envelope and the inner porous bag which contains the dye. At the top of the outer envelope is the length of tape with which to secure the pack to the user.

Life jacket dye markers

To aid rescuers in spotting a man who has fallen into the sea, the army and the navy provide special packages, called life jacket dye markers. These packages are attached to the life jackets of the men, who need only to pull the tabs on the packets to release a fluorescein dye that spreads out on and down in the water, giving it a yellowish green color which is strongly fluorescent. The dye creates a colored spot about 25 ft. in diameter, readily visible from 500 to 10,000 ft. in the air. The life of the dye spot is from 1 to 3 hours, depending upon whether the water be rough or not.

There is very little difference between the packets used by the navy and those used by the army. The kind of materials for the packages is the same, although the designs are somewhat different, owing to slight variations in the requirements of the two services. Both the army and navy packages consist of two parts—an outer water resistant packet and an inner flat porous bag which contains the dye. The material of the inner bag is porous paper with wet strength—the same kind of paper as that from which our ordinary tea bags are made. The bags are either stitched around the edges on a sewing machine or are closed along the edges by cementing them. The strength of the container is such that it will not disintegrate before the dye is dissolved, which takes less than 10 minutes, during which time the container is agitated in the water by the user.

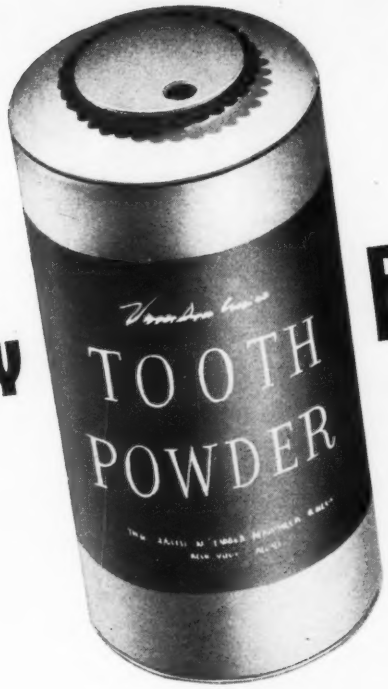
A 24-in. length of 1-in. tape secures the container to the outside waterproof fabric dye pack. This prevents the bag of dye from floating away from the person lost at sea. The outside packet is firmly attached to the life jacket itself, so there is no danger of the dye marker going astray.

The outer orange-yellow envelope which protects the dye container is made of a cotton fabric which has been given a vinyl coating. The fabric used is strong and the coating assures complete waterproofness. The whole pack will remain waterproof for at least 48 hours.

A square envelope is used by the navy and it has a length of 1-in. tape attached to each side of the top of the pack for use in securing the pack to the user. The envelope itself has a back center seam and is heat sealed at the top. The top is folded over the tape which is held (*Continued on page 104*)

Army uses this type of outer envelope, which is secured at the top to a pocket flap on the life jacket. Inner bag containing the dye is the same as that of the navy.

War Casualty Becomes Hero



An early packaging casualty of World War II was the tooth powder can.

Literally millions of Americans, including soldiers, sailors and civilians, were dependent on the metal cans which contained and dispensed their dentifrices.

Burt helped to turn this packaging casualty into an over-the-counter hero by designing and producing distinctive *paper* cans with handy dispensing closures.

These containers helped the manufacturers supply their customers without interruption. In fact, the packages are so different that they make a good point around which merchandising programs may be planned. They stand up in regular use with full consumer satisfaction. Bottoms are specially coated for water resistance, and cans are lined with impermeable material to retain flavor of contents.

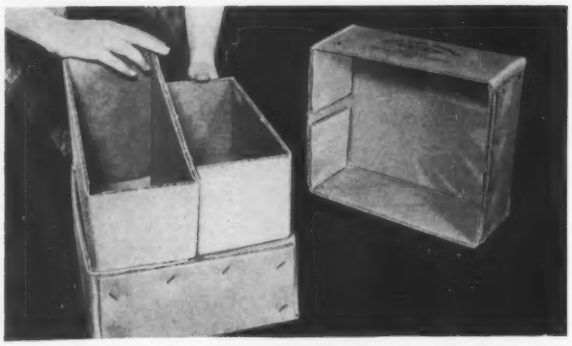
This is another of Burt's contributions toward "Keeping 'em Selling" in wartime. Others will be featured in this space each month.

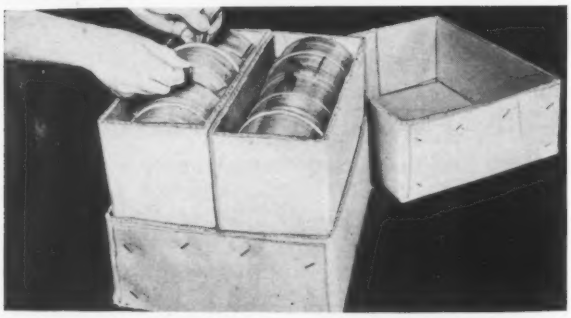
We are doing our best to supply these containers in great quantities, but our facilities are already taxed to capacity.

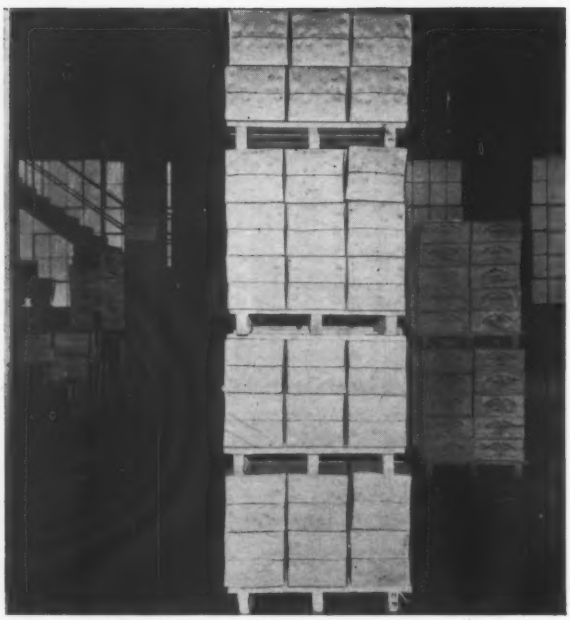
F. N. BURT COMPANY, INC.

500-540 SENECA STREET, BUFFALO, N. Y.

NEW YORK CITY · PHILADELPHIA · BOSTON · ST. LOUIS
ATLANTA · CHICAGO · CLEVELAND · CINCINNATI · LOS ANGELES
NEW ORLEANS · MEMPHIS · MINNEAPOLIS · KANSAS CITY
SAN FRANCISCO: 216 Pine St. — Telephone EXbrook 5323
CANADIAN DIVISION: Dominion Paper Box Company, Ltd.
469 483 King Street, West, Toronto 2, Canada







Steel stitched cartons for wire

The critical situation in lumber for shipping cases has prompted a great many companies to experiment with corrugated and fibre containers. Among these firms is the Acme Steel Co. of Chicago. Up until the present time, Acme Steel was never able to find a container which could carry 100 lbs. of its stitching wire, heavily concentrated in a small area. Now the company has itself developed a carton to carry a hundred pounds of this wire, which is used for the stitching of cartons. The new shipping case, constructed of double-wall corrugated board, is the result of the company's own research and experimentation over a period of several years. Containers were given drum tests and constant shipping under actual, difficult shipping conditions to discover any weak points.

The container adopted consists of four parts, all of which are designed for quick assembly. Tops and bottoms are purchased by Acme in the form of scored blanks which are set up and stitched as needed. Two taped tubes form a separator in the center of the carton. This type of separator was chosen since it divides the container contents into smaller units. Such separation eliminates the possibility of the total pressure being exerted on any one point within the carton. By this means the full strength of the container can be used to best advantage.

To facilitate the removal of the stapling wire by the receiver, a ribbon is placed through the core of the last coil packed in each tube. The containers are sealed and reinforced with two $^3/_8$-in. steel straps which are quickly applied to the carton by means of tensioning and sealing tools.

The new shipping pack has advantages for the receiver as well as the shipper, Acme points out. Upon receipt of his shipment of stitching wire, the purchaser merely snips the straps to remove the contents of the carton. Since the cover is easily removed and replaced, this new double-wall fibreboard case serves as an excellent storage place for the unused portion of the wire.

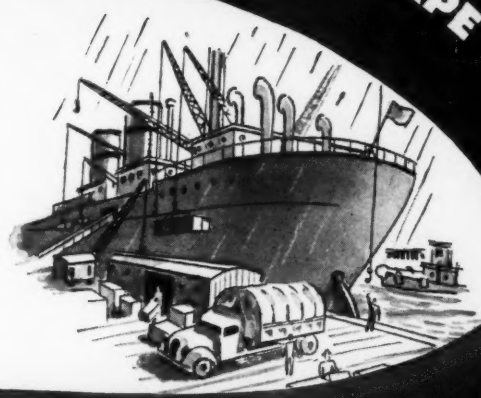
Usually containers of Acme's stapling wire are shipped on skids. At first this seemed to present a problem for the company, since it was thought fibreboard cartons, containing 100 lbs. of steel wire, would not permit this kind of shipping. However, after trial shipments of the wire in the new cases, it was found that shipping on skids was no obstacle at all. Not only do the containers ship well, but they also are easily handled in the warehouse, for stacking and storing. They may be handled in the same manner as the previous wood cases.

Credit: Fibre case developed in collaboration with Brunt & Co., Chicago.

1. The carton, which has been easily assembled, is now ready for immediate use. 2. Two taped tubes form a separator in the center. 3. A ribbon is placed through the last core of the stapling wire packed in each tube, to facilitate removal by the receiver. 4. Strength and stackability of the fibreboard containers are illustrated by this photo, showing both wood and fibre shipping cases.

SOLSEAL WATERPROOF TAPE

OF INTEREST TO EVERY EXPORT SHIPPER is this newly perfected water-resistant tape. Its objective—to seal or strap the new waterproof or moisture-resistant containers intended to carry materials for overseas shipments.



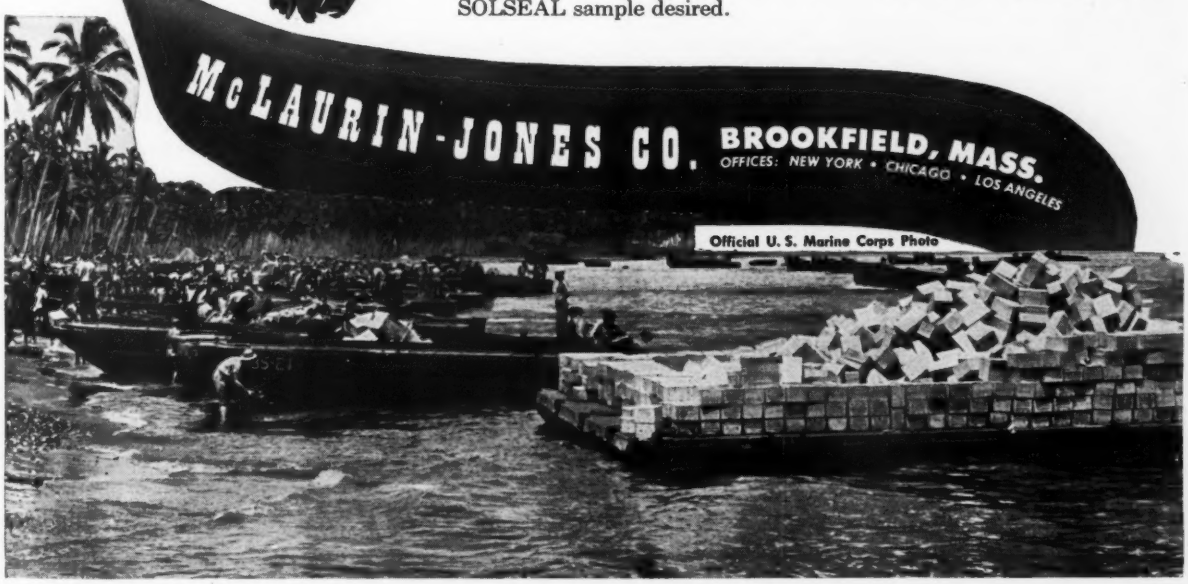
FOR SEALING WATERPROOF CONTAINERS

SOLSEAL Tape is available in 30/30/30, 60/30/30 and 60 lb. Wet Strength kraft with Solseal adhesive. Also available string-filled for use as a strapping tape.

Multiple tests have proven that the tape adheres to the container *for over eight weeks after immersion!* Under conditions of high humidity, rain and actual immersion this tape answers a real need. Write for *free sample coil* with solvent for testing purposes. Specify type of SOLSEAL sample desired.

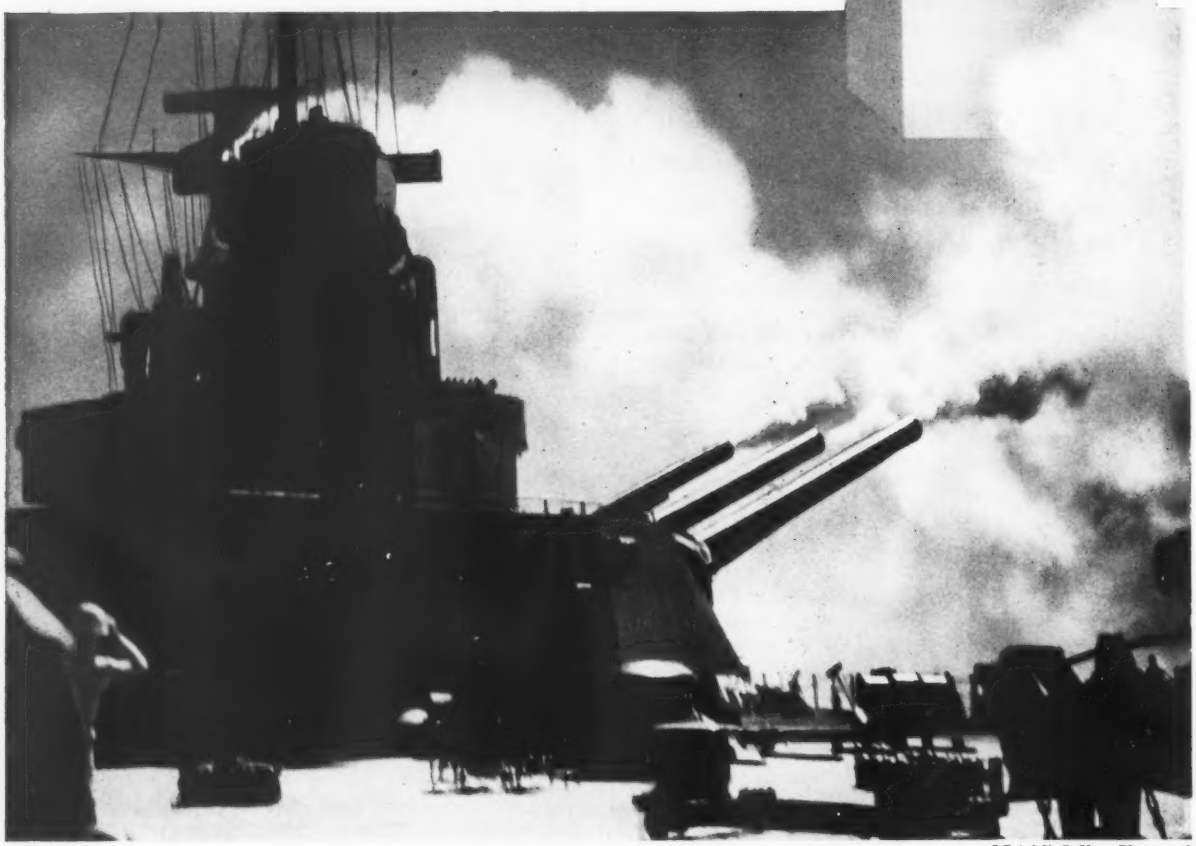
McLAURIN-JONES CO. BROOKFIELD, MASS.

OFFICES: NEW YORK • CHICAGO • LOS ANGELES



Official U. S. Marine Corps Photo

Safer "Convoy" for precious supplies



Official U. S. Navy Photograph

Submarines and bombers are not the only menace along America's far-stretched supply lines. Sub-zero cold, scorching heat, extreme humidity, frequent hasty handling — all these can exact a costly spoilage toll, if perishable products are improperly packaged.

Warnercraft is helping "plug" such leaks. New and better paperboard containers have been evolved — tough boxes and cartons that are moisture-proof, grease-proof, sift-proof.

A group of long-experienced Warner experts stands ready to assist you in securing safer transit for your product. They will help you help the war effort by packaging goods that reach the embattled users just as they left your plant.

YOUR PHONE IS ALWAYS HANDY
. . . For WARNERCRAFT SERVICE
. . . For WARNERCRAFT QUALITY
. . . For WARNERCRAFT PRODUCTS
Call Bridgeport 4-0101
New York Ashland 4-1195

WARNERCRAFT

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.

THE WARNER BROTHERS COMPANY

Main Office and Factory: 325 Lafayette Street, Bridgeport, Conn.
New York Sales Office: 200 Madison Avenue, New York, N. Y.

MODERN DISPLAY

Permanent holder with changeable signs

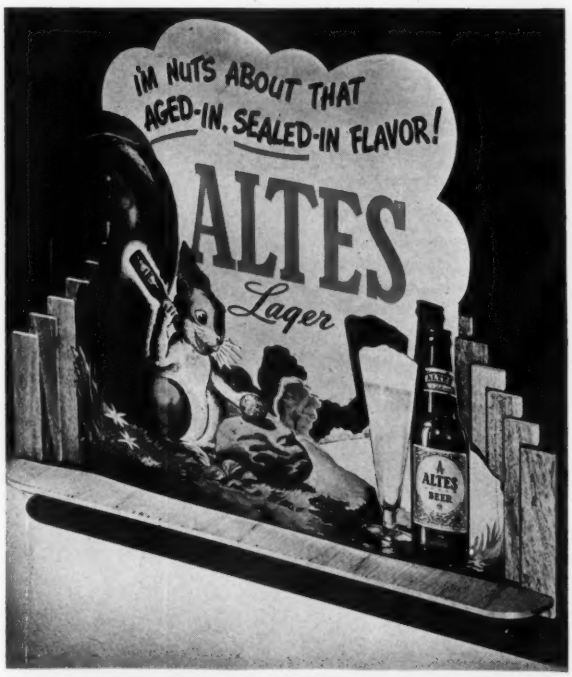
Point-of-purchase display advertising has been disrupted by the war for a great many firms throughout the country. Paper shortages, manpower restrictions and the dislocation of customary shipping facilities are a few of the problems that now complicate the normal task of adequate display card advertising. Many firms find, however that material shortages and increased rationing have somewhat alleviated the problem of advertising, since "with less to sell, there's less to advertise." But there are still firms that, for one reason or another, want to keep their advertising volume as near normal as possible. Many feel it vital that their names be kept before the public as much as possible, if only for goodwill purposes and if a "Buy Bonds" message takes the place of "Buy our goods." A few others still find it possible to maintain to a certain point the volume of their normal production and sales and therefore continue their regular advertising.

One such firm is the Altes Brewing Co. of Detroit, Mich., whose Altes Lager beer production has been growing steadily for the past two or three years. Previously, Altes Lager was produced as a secondary brand, but due to its popularity in the Detroit area, the firm has concentrated on this one product. The advertising for this product, therefore, has become very important. Because the Altes distribution is almost entirely in the Detroit metropolitan area, some of the normal problems of a national advertiser are eliminated. The distribution of its point-of-purchase material, for instance, is simplified considerably and, through the use of its own organization, rigid control of the spotting and replacement of the display cards is possible.

Probably the outstanding factor which has made such ideal control possible in wartime is the designing of a three-way system by the company's advertising manager, William L. Luckey. First, the Altes company has a permanent sign holder, which is placed on the wall of bars and grocery stores where Altes Lager is sold. Second, display cards that fit into the holder are changed frequently. Third, there is careful supervision by the salesmen or drivers to see that all the displays are kept current. By using a permanent sign holder, the company has the advantage of always having its messages appear in the same place and the danger of its advertising being thrown out, accidently or not, is eliminated.

The sign holder, which has been dubbed the "master sign holder" by Mr. Luckey, consists of an ingeniously designed combination of shelf and fluted-side receptacle into which the base of the sign is slipped. Most of the changeable signs are die-cut and sized so that there is a slight bulge when they are properly inserted. This assures a firm grip from the fluted sides and adds a third-dimensional illusion that makes every sign outstanding. The holder will accommodate signs in six different widths, from 17 in. to 26 in., and of any desired height.

Mr. Luckey and his firm did a great deal of experimenting on holders before the present form and design were selected. In fact, 14 different samples were manufactured and given a try-out before they found exactly (*Continued on page 112*)



Above. A seasonal sign has been placed in the holder. The edges of the sign fit into a pair of the clap-board-like wood pieces on either side of the holder. Below. The permanent holder, showing construction. Brand name and sales message appear beneath the shelf.

Display Gallery

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1 A whole new series of window paste-ups and over-the-line pennants has been brought out by Northern Tissue based on the company's sales theme, "gentle." Children and animals again make up the illustrations, which are printed in full color. Fauns, baby skunks, polar bear cubs and other baby animals depict the general theme in amusing, cartoon-like situations. Northern Tissue has been using for some time this same type of pictorials with success. Displays by United States Printing & Lithograph Co., Cincinnati, Ohio.

2 The problem of a small counter display that will hold a full dozen items and still take a minimum of space is solved with this smart new display unit created for LaMaur Products, Inc., of Minneapolis. The full display measures just $9\frac{1}{2}$ in. wide by $4\frac{1}{2}$ in. deep by $7\frac{1}{2}$ in. high, yet it takes full advantage of the colorful packaging and attractive design of LaMaur's new hair dress oil bottles. Designed for display in beauty shops, the colors have been kept to soft, pastel shades, suitable for the average shop's decorative scheme. Made by Flour City Paper Box Co., Minneapolis, Minn.

3 The life-like window display piece shows two war workers with a picture of Kellogg's All-Bran package and an appetizing dish of All-Bran wih prunes and milk. The poster carries the caption, "Keep Regular! Wartime Living Demands It." The piece is about 40 in. high and is intended for general window and inside store use. It has up-to-date appeal for the American public and the displays are being distributed throughout the country by Kelfogg. Display by Zipprodt, Inc., Chicago.

4 This summer wall display for Orange-Crush has an appealing nostalgic quality about it. Pretty girl in a canoe floating on a pleasant stream dotted with lily pads has been a favorite kind of picture with Americans since the days of the ice cream parlor and Gibson girls. This poster is a lithographed reproduction in full color of a painting by an outstanding American artist, who painted it specially for Orange-Crush. It is available to the beverage company's dealers in two styles—one in a beveled frame for hanging on nail or cord and another in a flat frame for tacking to the wall. Miniatures may also be obtained if drugstores and

3

soda fountains would like to have them for windows or backbars. Display made by Niagara Lithograph Co., Buffalo, N. Y.

5 Victory gardening and home canning go hand-in-hand in keeping up the food supply on the home front. Recipe books and instructions on canning have gained wide popularity with housewives who are learning, many of them for the first time, how to preserve vegetables and fruits. Ball Bros. Co. distributed a canning recipe booklet, "The Ball Blue Book," for homemakers, thus reaching the consumer of their product at the point of use. This promotional material was immediately followed up with displays, like the one illustrated, which would reach the consumer at the point of purchase. Display by The Forbes Lithograph Mfg. Co., Boston.

6 Pond's does a related-item display for retailers that is timely as a headline. Pictured at the head of this counterpiece is a pretty war worker. She is shown engaged in her war job. A personalized message tells about her and something about her work. Women now are particularly attracted to this type of poster since it has news value and presents a human interest story. On the three tiers of the display, creams, powder and lotion are featured. Counter display by Oberly & Newell Lithograph Corp., New York City.

7 Devoe & Raynolds Co., calls this unit their Spotlite Bar. It is being sent to the company's dealers free of charge, but one or more is offered in ratio to certain merchandise deals purchased. The bars are being used during a special promotion of some or more of the company's products. The one illustrated offers a set of four bowls at only 19 cents to customers making a purchase of any Devoe paint product. Attention, however, is focused on the Devoe's new dehydrated flat wall paint, Dehydray. The bars are made of a lithographed sheet mounted to corrugated. A surface colored in dingy and dark colors represents wallpaper in need of refurbishing. Several brush strokes of light blue Dehydray show graphically what can be done to such wallpaper. The bar contains a shelf in the back for storage. Unit designed and made by Einson-Freeman Co., Inc., Long Island City, N. Y.

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More emphasis on household aids

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Some of the sales volume which has been lost in food markets generally as a result of rationing has been recaptured in the Bellman Super Markets in Toledo, Ohio, by using a series of newly designed displays for selling various conservation aids.

Stressing the theme, "Save what you have," as a wartime measure, the displays have had the effect in the Bellman stores of increasing the sales volume in this line of products by about 50 per cent, according to Elery Holt, manager of the largest of the five Bellman markets in Toledo.

One of the typical displays used by Bellman shows a large, neatly painted sign, "Save What You Have with These Conservation Aids." Then in neat and compact order are arranged bottles of floor wax, scratch remover, furniture polish, window cleaner and related articles. Copies of an advertisement from the *Saturday Evening Post*, showing movie star Claudette Colbert posing beneath the slogan, "It's Your Duty to Save What You Have," are used to advantage in the variously arranged displays.

Other treatments of the conservation aids make use of ingenious case cuts, which facilitate the building of the displays and at the same time use fully the space occupied by the display for storing merchandise on hand. Some of the cases are cut to make panel displays, that is, diamond or oval shaped portions are trimmed from the end or side of the cases in order to expose the contents. A slope cut is given other cases. The broad side of the case is cut 1 in. from the bottom, then it is cut diagonally on both sides from the first cut to top center of the case. The cut portion is folded back to make the desired slope. This gives the case a decorative effect. When cases are used as tumble bins, to make them more eye-catching, the front is cut in a V- or U-shape.

The base of the displays are protected so that the products on the bottom are not soiled. Either full cases are placed on the floor or the cases have a wooden base on which to rest. The arrangements are neither too high nor too low. A height of about 52 in. has been found to be the best. Price cards appear on the displays in prominent places, but they are not placed in front of the goods where they would stop people from buying. All the displays have a starting gap so that customers will not hesitate to disturb an arrangement which is too symmetrical.

The Bellman market puts these displays in good locations, since they are primarily intended to increase sales volume. Skimpiness has been avoided in all the displays. When small quantities of goods are displayed, the base is dummied or other means are devised to give (*Continued on page 106*)

1. The department which has been set aside in the Bellman market for conservation aids. This has been set up as a permanent feature so that housewives know just where to go in the store for these items. 2. A large aisle display arrangement with slope cuts on the cases to give a decorative note. Diamond shape cut-outs in the cases allow the packages to be seen. 3. Housecleaning as well as conservation aids make up this mass display.

DELIVERED IN SARAN FILM — READY FOR ACTION

Thousands of .50 cal. machine guns are now moving to our fighting fronts protected as never before from moisture, dirt and dust. They are encased in *Saran Film*—the new, completely different transparent packaging material developed by Dow. *Saran Film* is a veritable barrier to moisture—*3 times more moisture-proof than any other comparable material.*

No longer need machine guns and metal parts be covered with heavy, hard-to-remove grease. Now they are properly lubricated, sealed in *Saran Film* envelopes, packed and shipped—actually barricaded against their ever-present enemy—moisture. On arrival, they are quickly unpacked—and ready for action!

Saran Film is a tough, durable material, highly resistant to chemicals and flexible at low temperatures. The full story of this Dow development and its peacetime uses for nearly every type of packaging is told in a new, colorful folder, "*Saran Film*—Keeps Moisture In Its Place." Write for it today.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston
Los Angeles • San Francisco • Seattle

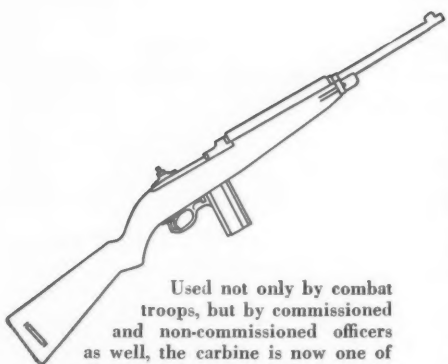
Saran film

KEEPS MOISTURE IN ITS PLACE

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

CARBINE CLIPS... latest addition to the large number of products wrapped for war on our machines



Used not only by combat troops, but by commissioned and non-commissioned officers as well, the carbine is now one of the most important weapons in the service . . . Large quantities of clips are needed to feed these guns and they must have the most dependable protection against dirt and moisture so that there will be no chance of jamming.

High speed, quick adjustability for various sizes, and the fact that they can do a perfect job with practically any wrapping material, has made our wrapping machines the most widely used—in war and in peace. Carbine clips are the most recent addition to the large variety of products now being wrapped by these machines.

Operating at a speed of 75 per minute, our model FA wraps each clip in a special material selected for its strength and moisture-resisting properties. You'll notice that this material has a crinkled surface and that the clip has a rounded side and an uneven surface at one end. Yet in spite of these difficulties, the FA makes an extremely tight and firmly heat-sealed wrap. This is but one of over 70 models of our wrapping machines in the service of American manufacturers.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts
NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

PACKAGE MACHINERY COMPANY
Over a Quarter Billion Packages per day are wrapped on our Machines

TECHNICAL SECTION

- MACHINERY
- PRODUCTION
- TESTING

Technical Editor
CHARLES A. SOUTHWICK, JR.

1. *Cellulose acetate sheeting used in packaging cut to exact thicknesses from pressed slabs or blocks. The block is placed in position on a supporting bed which travels toward the knife.*

Cellulose acetate sheeting—its properties and applications

*by A. F. Caprio**

This is one of a series of articles on basic packaging materials appearing in this Technical Section. It includes not only present and past applications, but points to future possibilities. Although some of the uses illustrated are now restricted, they are presented to give the reader a broader understanding of what such materials will do and to aid in future planning.

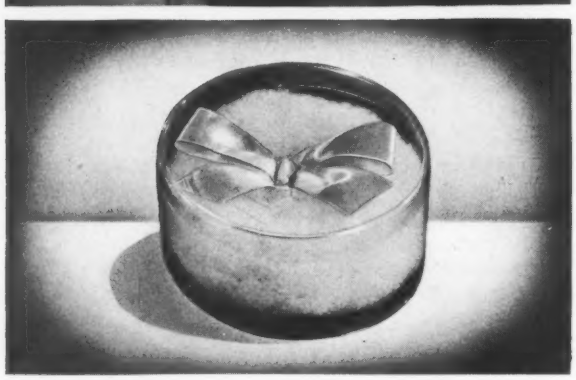
Present-day popularity of cellulose acetate plastic began with the commercial introduction in 1927 of this material in the form of sheets, rods, tubes and molding powders. Three years later in 1930 a transparent sheeting material prepared from the same base brought this new material into the packaging limelight.

To understand the manufacture of cellulose acetate sheeting, particularly its production in heavy gauges, reference may be made to the methods employed in the manufacture of celluloid sheeting.** The treatment of purified cotton linters or cellulose with a mixture of nitric and sulphuric acids results in the formation of cellulose nitrate or pyroxylin. Cotton linters are the short fibres which cling to the cottonseed after ginning and which are not suitable for spinning into sewing or weaving thread. The cellulose nitrate which is formed, cannot, however, be molded under heat or pressure, unless a plasticizing agent, such as camphor, is employed. The basic ingredients of celluloid, hence, are cellulose nitrate and camphor combined in such a manner as to form a solid or colloidal solution. Numerous camphor substitutes have been investigated.

Cellulose acetate, on the other hand, is produced by treating the linters with a mixture of acetic anhydride, glacial acetic acid and a catalyst under very exacting conditions. The primary cellulose triacetate which is formed shows upon analysis an acetic acid content of 62.5 per cent.[1] This product, however, is insoluble in acetone and must be "hy-

* Chief, Patent and Data Division, Celanese Corporation of America, Plastics Division.

** Ed.—Not to be confused with present cellulose acetate sheeting.



drolyzed," as taught by G. W. Miles, to the acetone soluble variety which usually shows an acetic acid content of about 54 per cent. After hydrolysis the dissolved cellulose acetate is precipitated in water, dried and obtained in the form of white flakes. These are then mixed with plasticizers, dyes and other effect materials and worked up in the commercial cellulose acetate plastics on the market today.[2] These same acetate flakes can also, with suitable treatment, be spun into yarns for dress, drapery, hosiery, "wrinkle-free" collars, parachute and tire fabrics and numerous other textile weaves.

For the production of plastics according to the "block" process, the cellulose acetate is treated with solvents, such as acetone, and plasticizers, in huge dough kneading machines, such as are used in the manufacture of celluloid. Instead of camphor, the plasticizers generally employed with cellulose acetate are triacetin, tripropionin, dimethyl phthalate, diethyl phthalate, dibutyl phthalate, dibutyl tartrate, dimethoxy ethyl phthalate, methyl phthallyl ethyl glycollate, etc. The most common fire retarding agent employed in conjunction with these active plasticizers is triphenyl phosphate developed during the first world war for making non-flammable airplane coatings. The kneaded jelly-like mass is then submitted to a filtering operation employing tremendous hydraulic pressure and a closely woven cloth and fine mesh screen to remove all traces of objectionable impurities. The plastic mass after it leaves the filters is manipulated between a pair of malaxating or "converting" rolls to homogenize further and to effect a better dispersion of the ingredients and also to permit a multitude of coloring effects. The rolled material having a definite consistency is finally smoothed up into a crude rolled sheet measuring approximately $1/2$ in. in thickness. A suitable number of these rolled sheets are stacked upon one another in a "chase" or steel box to a depth of about 6 in., and then consolidated under heat and pressure into a solid block or cake, known as a "heat." After cooling to the correct temperature, these blocks are cut into sheets of suitable thicknesses from .005 in. up, under a planer knife. The block is placed in position on the supporting bed which travels towards the stationary knife. The cut sheets are then piled in 25 or 30 layers with a sheet of corrugated paper placed between each sheet. Each pile is placed in a drier to drive off solvents. Next they are moved to seasoning vaults to remove remaining solvents, such as acetone, alcohol, etc. The hardened and seasoned sheets are finally polished between metal plates, again using heat and pressure, or finished in various ways to produce a multitude of effects depending on the polishing or embossing medium used. Thus, if a highly polished metal plate is employed, the acetate sheet acquires this finish; if a matt plate is employed, the acetate sheet is also rendered matt. Owing to its easy flowability under heat, the sheet conforms most faithfully to the finishing or embossing medium, whether this is a mirror-like metal plate, a silk or linen fabric, a plate with an engine turning design, etc. In this same step the cellulose acetate sheeting can also be readily laminated to many other materials owing to its easy cementability and plasticity. Following the block process, cellulose acetate sheeting can be made measuring from .005 in. to 1 in. in thickness. The plastic sheeting

2. Transparent boxes are formed on a hot knife against a rubber pad. 3. Cellulose acetate sheeting is a thermoplastic material which may be formed in a drawing press. Photo shows drawing of round covers for cylindrical containers. 4. Radio, telephone and electrical parts for the Marines are protected in these rigid transparent containers. 5. The same type of containers were used for powder puffs and cosmetics in pre-war days.

can be produced in all the colors of the rainbow, can be made transparent, translucent or opaque and in pearls, mottles or configurations.

For the production of films and foils of continuous lengths ranging in thicknesses from .0005 in. to .010 in., the usual method employed is "casting" a thick acetate solution, called a dope, on large moving wheels or bands. The dope, containing cellulose acetate, plasticizer and solvent and possessing a uniform viscosity is fed to a hopper from which it is spread by means of a scraper or by extrusion from the nozzle of the hopper on to a continuously moving casting surface which may be the highly polished face of a large wheel or of an endless belt.[3] In the travel of the casting surface the volatile solvents in the dope evaporate, leaving a self-supporting film or foil which is stripped from the surface, dried or seasoned in a hot air chamber and finally wound on a spool in a continuous roll.

Films may also be readily laminated to form heavier gauge material, such as .015 in., .020 in., etc. in thickness.[4] These have an advantage over planer cut sheets as they are free from "knife-lines." Films and foils may also be coated on the surfaces with suitable waxes or lacquers to reduce moisturevapor transmission. The tendencies of any formulations to "block" can be overcome by the incorporation of tackiness inhibitors into the dope before casting.[5] Acetate sheeting can also be rendered non-fogging in character.[6] This property is desirable in gas mask lenses.

Besides the "block" method and the dope "casting" process, cellulose acetate plastic material may also be "extruded" either in a wet (containing solvents) or in a dry (without solvents) condition to form a sheet, rod, tube, etc., of continuous length. Thus, the wet method has been commercially employed for making cellulose acetate sheeting of about .025 in. thick for the making of laminated glass[7] while the dry extrusion of celiulose acetate plastic in the thin wall tubing has made possible the large scale production of the so-called plastic collapsible tubes used for toothpaste, etc.

Fabrication

Owing to its high plasticity, easy cementability, toughness and mechanical strength and chemical stability, cellulose acetate sheeting readily lends itself to easy fabrication or workability into a multitude of attractive and useful forms. Unlike regenerated cellulose, cellulose acetate films and foils are thermoplastic. They soften with the application of heat and harden or set again upon cooling. Heat softening at elevated temperatures can be repeated without any chemical change taking place in the material. The degree of plasticity in the sheeting can be controlled over a wide range by varying the amount and type of plasticizers and type of cellulose acetate (the higher the degree of acetylation, for example, the greater its moisture resistance) to emphasize certain physical characteristics most desired in the finished article.[8] The ease of lamination and cementing permits the adornment of baser and unattractive materials with colorful, decorative veneers.

Acetate sheeting lends itself readily to heat forming opera-

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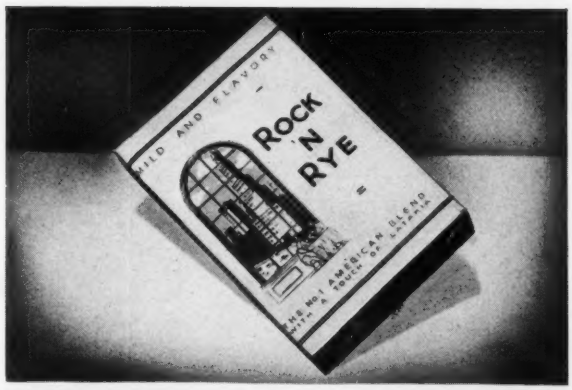

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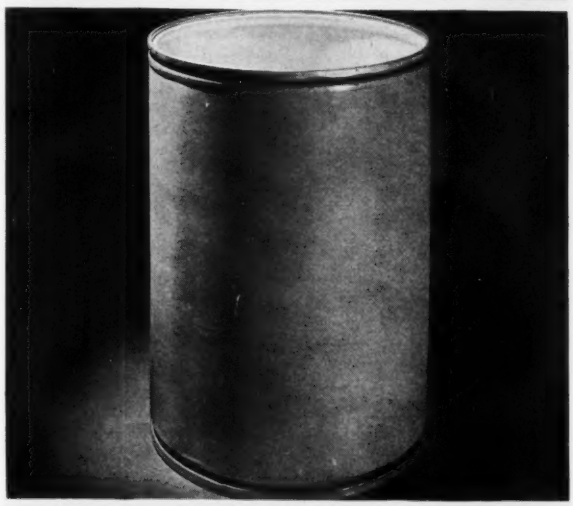

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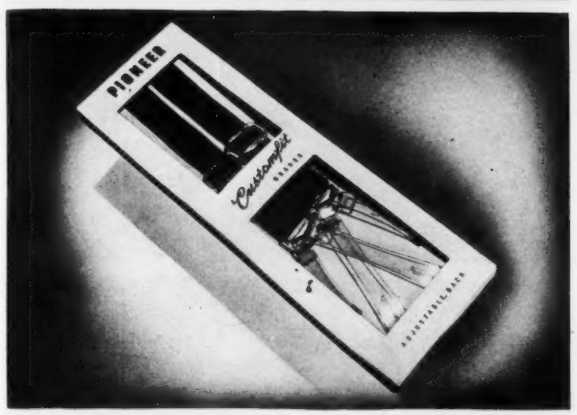

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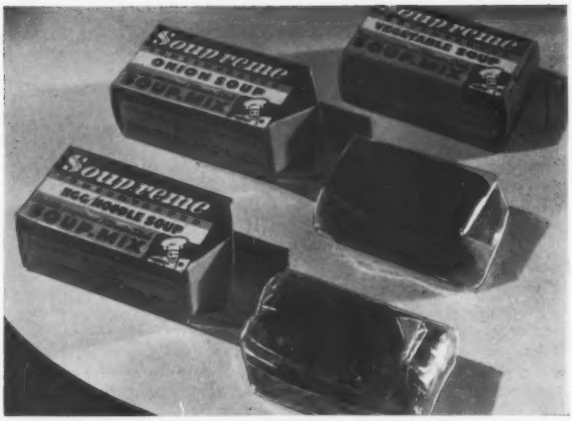
Examples of cellulose acetate sheeting used as a laminating material. 6. Rock 'n Rye package shows this material laminated to paper for tobacco wrapping. 7. Cellulose acetate lined drums have replaced metal containers for a number of products. 8. Laminations of cellulose acetate and paper impart lustrous appearance to box with transparent window. 9. Spare parts are protected from corrosion by lamination of cellulose acetate and other materials which act as oil and waterproof barrier.



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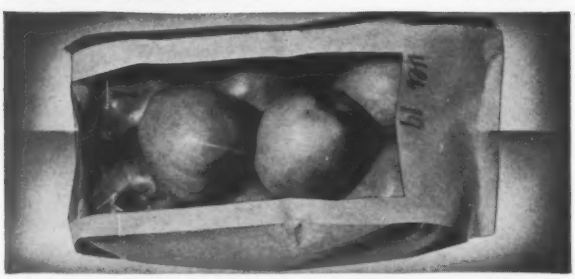

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Transparent cellulose acetate films are used widely in food packaging. **10.** *Wrapping for concentrated soup mix.* **11.** *Window cartons provide visiability.* **12.** *Paper bag with transparent panel helped Eastern growers to dispose quickly of 1940 apple harvest destined for England, but which could not be sent due to shortage of ships. In bags like this, the apples sold themselves in American markets.* **13.** *Because cellulose acetate film permits vegetables to "breathe," this material gained wide favor before wartime restrictions.* **14.** *Bacon wrap shows use of color printing on such films.* **15.** *Avocado growers in California adopted cellulose acetate "breather" wraps to protect fruit through long shipments and storage.*

tions such as bending, forming, drawing and swedging. The heavier sheets can be stamped, sawed, milled, routed, turned, drilled, tapped, etc. As stated before, the ease with which cellulose acetate sheeting can be cemented to itself and to many other materials by means of volatile solvents and body cements simplifies fabrication and an assembly of many articles. For example, cellulose acetate film or foil can be readily cemented to textile fabrics, cardboard, wood, leather, etc., or to itself.[9] Because it does not shrink or stretch or wrinkle, acetate foil remains indefinitely an actual part of the object laminated. Because it is crystal-clear and grainless, it imparts a tonal depth, a rich and lustrous aspect to the surface underneath. The surfaces are smooth and delightful to the touch and the laminations increase the tear and fold strengths.

The ease with which cellulose acetate foil can be laminated to paper finds very important application in decorative packaging, protective packaging for tobaccos and liners in paper containers for many products and for cartons and boxes where greater eye appeal is provided by its lustrous appearance over the paperboard.

One method of lamination is by means of adhesives in a continuous high speed operation. This can be done by two methods; roll of acetate film to roll of paper, cloth, etc., or roll of acetate film to sheet of paper, cardboard, etc. An example of an important war application of this type of application is the new Ordnance wrapping material. Here several materials are combined with cellulose acetate foil forming one ply and providing the water, grease and oil barrier in the combination.

Chemical properties

Cellulose acetate foils and films (gauges .0005 in. to .010 in. inclusive) are soluble in many organic lacquer solvents as for example, the ketones, such as acetone and methyl ethyl ketone, certain esters as methyl acetate, methyl Cellosolve acetate, ethyl lactate, but they are insoluble in butyl and

PROPERTIES OF CELLULOSE ACETATE FOILS (.00088 IN.–.002 IN. IN THICKNESS)

Property 0.001 In.	"Lumarith P 903" (Flexible Type)	"Lumarith P 904" (Semi-rigid Type)
Specific gravity	1.28	1.31
Approx. yield (sq. in. per lb. for .001" thickness)	21,700	21,200
Tensile strength, p.s.i.	7,000	10,500
Refractive index	1.488	1.480
Elongation, %	15–25	7–12
Mullen bursting strength, p.s.i.	39	51
Softening temperature, ° F.	295	350
Moisture absorption, % 24 hrs. at 0% RH plus 48 hrs. at 90% RH	4	6.5–8.5
Heat shrinkage, %		
48 hrs. at 140° F.	1.0–2.0	.05–.13
24 hrs at 200° F.	4.2	.5
Humidity expansion, % 24 hrs. at 0% RH plus 24 hrs. at 75% RH	.3	.5
Light transmission, %	92	92
Heat resistance, 24 hrs. at 275° F.	No charring nor discoloration	

amyl acetate. They are softened or swelled by alcohol, chlorinated hydrocarbons and some esters. They are unaffected by gasoline, benzol, toluol, grease, animal, mineral and some vegetable oils. They have fair resistance to weak acids and alkalies, but are decomposed by strong acids and alkalies.

Applications

The use of cellulose acetate in the packaging industry is, for the duration of the war, sharply curtailed. It is only available for direct war applications and the most essential civilian requirements. Among the most outstanding war applications is the use of cellulose acetate foil in laminated combinations with other materials to form an Ordnance wrapping material that meets what at first seemed to be an impossible requirement. War planes of all types require great quantities of cellulose acetate in the form of sheets and formed and molded parts. Transparent cellulose acetate containers are being used by all of the services to protect replacement parts in storage and for repair or service kits. These are typical uses. Space does not permit even a partial listing of cellulose acetate's contribution to the war effort.

After victory

With typical American optimism and faith in our industrial ingenuity, it is the universal belief that wartime technology will carry over into peace. This is certainly true of the practical and even revolutionary packaging methods necessity mothered.

It is reasonably certain that shippers of machine parts, heavy goods and perishables will continue to use the so-called Ordnance wraps and similar combinations incorporating cellulose acetate as an oil and water barrier. Even the exigencies of wartime could find no other packing method as satisfactory for these purposes. Their low cost, ease of handling, and (because of their fold qualities) ready identification of contents are enough to recommend them. In addition, they are extremely light weight, with consequent reduction in shipping costs. Apply this consideration to projected air transport and for the years of reconstruction alone there will be a vast potential market.

The transparent rigid container of cellulose acetate will in all probability continue in demand as a utility item. Its widespread application to protecting and shipping replacement parts for delicate apparatus, vulnerable parts for electrical devices and other machines, as a stock or inventory box, as parts boxes for repair kits used by armed forces and as first aid kits can simply be transferred to industry. Its transparency allows ready identification of contents saving minutes when they count most, and obviates error. It speeds assembly and will save time and money in stock control and inventory operations. (*Continued on page 104*)

16 *and* **17.** ***The supreme achievement in luxury gift packaging (left) and modern display (right). These things are out for the duration, but watch for more of them once the war is over. The Christmas-tree globe display is an excellent example of drawn rigid transparent cellulose acetate sheeting.***

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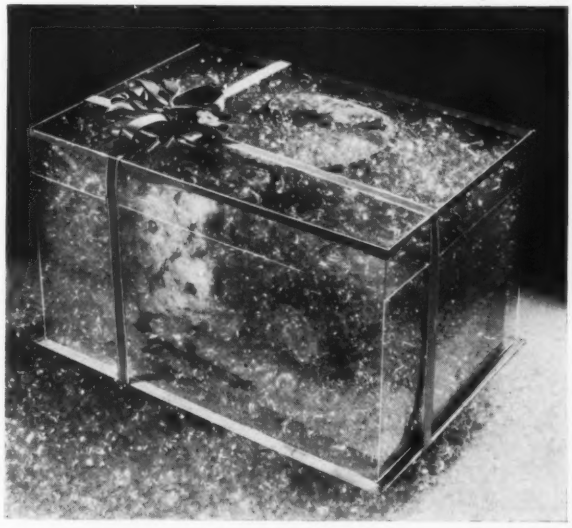

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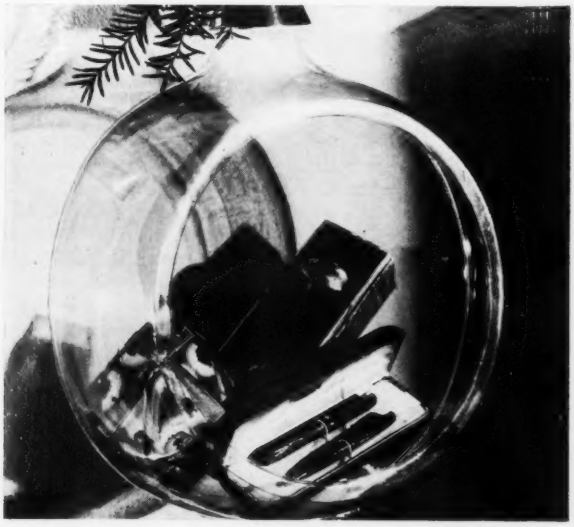
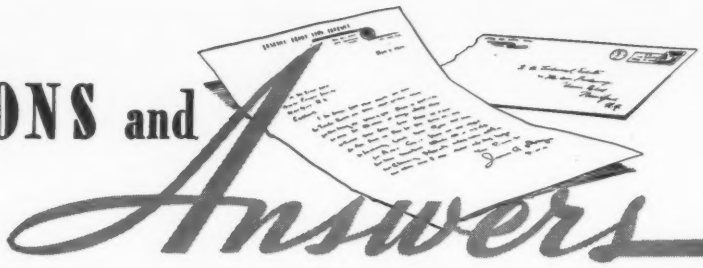


QUESTIONS and Answers



Seal strength in end folds

QUESTION: In using waxed wrappers in which frozen foods are packaged, I have noticed that many of the end folds have little or no seal strength. How can I overcome this difficulty?

ANSWER: Any adhesive material which is to be used at low temperatures must be specially formulated for this particular type of performance. This is true for aqueous or solvent based adhesives as well as for heat-seal lacquers, waxes, etc.

Frozen foods are held in the neighborhood of 0 deg. F. and will be handled and distributed at this temperature. The problem then is of obtaining sufficient toughness and flexibility of coatings and adhesives so that they do not crack or chip off or separate in the handling at low temperatures or in the packing and freezing operation which take place.

In the case of your waxed wrapper, the heat-sealed seams or seals lose their strength because the wax becomes crystalline and has no cohesive strength at low temperatures. It is possible, however, to add materials which modify the characteristics of the wax to such an extent that such seals have good tenacity.

Suggest that you get in touch with any one of the suppliers of functional waxed paper and obtain from them samples of their waxed coatings which have been modified for low temperature durability and strength of seal. Be sure, however, that such papers have retained their normal moisture-vaporproof characteristics because in some wax modifying agents may give good seal strength at low temperature and yet also reduce the moisture-vaporproofness of the finished wrapper. Also be sure such waxed papers can be run continuously on wrapping and sealing equipment.

Army and Navy specification

QUESTION: I have a copy of "Army-Navy General Specifications for Packaging and Packing for Overseas Shipment." Can you tell me the reason for specifying the greaseproofness, pH limits, total acidity of Method I materials in the packaging of metal parts, and only specifies the moisturevapor transmission rate of Method II materials?

ANSWER: The preservation of parts for overseas shipment by Method I is passed on the maintenance of a film of corrosion preventative coating. There are a variety of such materials which range from hard films to thin oils. It is the function of these coatings, which are put on after careful cleaning and in a prescribed manner, to protect the surface of the part from corrosion by airborne moisture. It is the purpose of the wrapper or the packing material in contact with the part, to protect this film from being absorbed or in any way leaving the surface of the part. Since these coating materials are of a greasy- or oily-type nature, it is necessary to specify the greaseproofness of the packing material. However, it is also possible for the inside surface of the wrapper to rub or press through some of the softer preservatives and so come in contact with the metal itself. For this reason, it is necessary to specify that the wrapper be in itself non-corrosive. For this reason, the pH range is prescribed and also the total acidity. This particular pH range from 6.5 to 7.5 is very close to the neutral point which is at pH 7. In other words, this wrapping material has an infinitely small acid activity and a very small quantity of total acid present. Both of these requirements insure against the possibility of the wrapper itself causing any corrosive effect.

Method II packaging is used for either metal parts which cannot be dipped or otherwise coated with preservative compound because of intricate construction, such as, oil holes, etc., or for finished material such as engines, electrical equipment, etc., which could not be coated with compound, or which would require a long time for re-preservation in the field. This method is based upon the fact that metal surfaces, either untreated or with very thin oil films, will not corrode if the atmospheric moisture is kept below 30 per cent humidity. This is effected by enclosing the part in a highly water-vaporproof barrier and inserting a moisture absorbing material, then tightly closing the package, usually by heat-sealing. It is the purpose of the desiccating material to keep the humidity in the package at 30 per cent level and the function of the wrapper to retard the passage of moisturevapor to insure a long time of preservation. Obviously, the lower the water-vaporproofness of barrier, the greater time of preservation.

Address your questions to Charles A. Southwick, Jr., Technical Editor, Modern Packaging, 122 East 42nd Street, New York 17, New York.

Wetproof cartons

QUESTION: How may cartons be wetproofed?

ANSWER: Folding cartons can be more or less waterproof by by the application of hot wax on the original blank or by the application of cold water wax on the printed individual blank or by laminating the original board with asphalt or with adhesive wax. Another method is to dip the filled and sealed carton into paraffin or blended wax. A very minor amount of waterproofness can be contributed by rosin and alum sizing in the beater. Weatherproof container board or V-board is made water resistant by the maximum use of rosin and alum in the beater, plus the addition or urea formaldehyde or outer high wet strength materials to the laminating starch adhesive.

Surface treatments

QUESTION: Scuffing and shifting of cartons in cases?

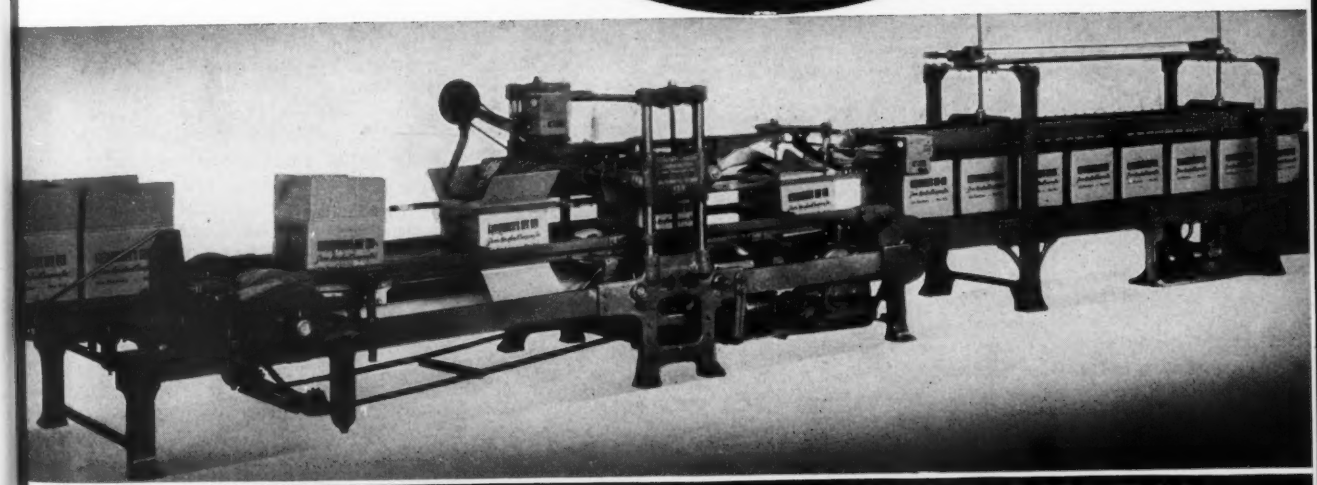
ANSWER: Shifting means mechanical movement, so reference to it will be omitted. As regards scuffing—surface treatments using rosin or wax emulsion or some other form of sizing in combination with high finish due to additional passes through the calendar rolls are the best methods for reducing the tendency of the carton to scuff. Some scuffing of cylinder-formed sheets is due to abnormal differences in the length of the fibre in the top liner as compared with the under liner. This tends to prevent the top liner from uniting firmly with the under liner and makes it easy for scuffing to rub the top liner loose. This difficulty can be corrected by proper jordaning. *(Continued on page 88)*

IF YOU CAN'T BUY A STANDARD-KNAPP MACHINE

PUT IT INTO War Bonds

The Best investment you can make in packaging machinery is to buy a Standard-Knapp case-packer or case-sealer. Leading manufacturers in all fields from baking powder to beer found that out long ago.

But high priorities may prevent you from getting the machinery you need, right now. So why not put the money into war bonds? It's the safest investment you can make—you're helping to finance the war—you're taking money out of the dangerous inflationary gap—and when the war's won (with your help) you'll have the price of the best equipment money can buy.



STANDARD-KNAPP CORPORATION

MANUFACTURERS OF CASE SEALING, CASE PACKAGING, AND CAN LABELING MACHINES

FACTORY and GENERAL OFFICES PORTLAND, CONNECTICUT

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CLEVELAND

300 Seventh Street
SAN FRANCISCO

420 S. San Pedro Street
LOS ANGELES

3224 Western Avenue
SEATTLE

1208 S. W. Yamhill Street
PORTLAND, OREGON

Paul Brown Building
ST. LOUIS, MISSOURI

Windsor House, Victoria Street, LONDON, ENGLAND

Affixing seals on bread wraps

QUESTION: In this country (England) we experience great difficulty in affixing seals on bread wrapping paper as the seals tend to fall off. Can you suggest a suitable adhesive for such seals and the best best method for applying these seals on the wax wrappers?

ANSWER: End seals of this type are made using a so-called hot melt which has a lower melting point than the wax on the wrapper and which has a very tenacious seal. Before the war, the composition consisting of wax and about 10 per cent crepe rubber was used with very satisfactory results. However, the same result is now being accomplished with other wax mixtures, probably using some synthetic resins. It should be noted, however, that the technique of applying these end seals is to use a heated pad after the bread has been wrapped in the wax paper. The temperature of the pad will depend upon the composition of the coating on the end seal and the type of wax paper. We suggest that you get in touch with some of the British adhesives and wax formulating companies who will probably be able to give you a composition which can be applied as a hot coating and which will achieve this result.

Corrugated vs. wood

QUESTION: Do corrugated cases ship as well on skids when filled with heavy articles as the wooden shipping cases?

ANSWER: It is difficult to answer this categorically, but in general it may be expected that properly made and properly specified wooden cases would carry better on skids than corrugated cases especially when the contents are heavy.

Permeability and resistance

QUESTION: Can you explain the difference between the terms "permeability" and "resistance" as applied to the moistureproofness of packaging materials?

ANSWER: Permeability is th measure of the quantity of water vapor which passes through a material. Its value is usually expressed in grams per sq. meter per 24 hrs. at a given temperature and humidity gradient. Resistance is a property of the material to the penetration of watervapor. Therefore, the lower the permeability value the better the material, and the lower the resistance the poorer the material is to the passage of watervapor. Since the word "moisture" is generally used to cover both water as found in the material (i.e., per cent water by weight or per cent moisture) and vapor as in the air (humidity) a better definition would be as follows: Watervapor resistance is that quality of a material which governs its permeability to water in the vapor phase.

Hygroscopic product in carton

QUESTION: I am interested in obtaining a carton board, which has an extremely high degree of moisturevapor resistance. This is to be used for a product which is very hygroscopic. Can you recommend several constructions which would meet this requirement?

ANSWER: In the packaging of products which are very hygroscopic, it is usually more efficient and effective to obtain at least some of the moisturevapor resistance by the use of inner liners or bags, or outer wrappers, rather than depend on the carton board for all of the functional properties. It is possible to obtain carton stock with good moisturevapor resistance by laminating to the board, a paper such as glassine using about 5 lbs. of a continuous film of amorphous wax per thousand square feet of surface. While this board will have good moisturevaporproofness it is not easy to die-cut. It is softened by summer temperatures and gives some difficulty with sealing. Furthermore, it is not possible to make a carton as tight mechanically as heat-seal liners or wrappers and this type of construction alone is not recommended for finely divided hygroscopic powders.

Reconditioning shells

QUESTION: We have several million folding shells made of 16-point white clay-coated manila board, lithographed and over-printed with a coat of press varnish. These shells were glued and the scores pre-broken on a Staude gluing machine. These shells have been stored all winter in our warehouse and are now very stiff and difficult to set up for the insertion of a paper tray. Can you recommend how to recondition these shells for this packaging operation?

ANSWER: Any board or paper can be formed or folded without breaking if the moisture content is sufficiently high. Board or cartons which have been stored for long periods indoors usually lose sufficient moisture and become brittle. Such dried out board will not have the fibre strength or foldability of board which has a normal moisture content.

Suggest that you recondition these shells by exposing them to about 80 per cent humidity for a few days before they are used. To do this efficiently, the boxes containing the shells should be open so that the moisture can readily be absorbed by the board. You can use a small room and increase the humidity with a heater and a small water spray. It is important to be sure that no free water either from the spray or from condensation falls on the stock, and the moisture pick-up and humidity control will be better if the temperature is raised by means of some heating arrangement. Pasted glassine to board has been reconditioned and used successfully after 18 months of indoor storage, so this technique will allow you to use these shells without breaking of the corners.

It should be possible to set up these shells by running them through a pair of belts with a taper so that the shell is compressed and discharged in the set-up position. This could be done with three moving belts: one on the bottom and the other two coming in with spring pressures on the side. The set-up shells can then be run along in front of the girls who could pick them up and insert the tray.

Duplex and laminated bags

QUESTION: What is the difference between a duplex and laminated bag?

ANSWER: A duplex bag is made by using two separate rolls of material going into the bag machine. In the case of a laminated bag, these same papers or other materials would be laminated on a separate machine and would then go on the bag machine as a single (combined) sheet. In the case of the duplex construction, it is possible to have one or all of the sheets as laminated materials. The usual practice is to spot glue tops and bottoms of the duplex materials for convenience in opening and to make a stronger bottom closure. The duplex bag usually has two separate side seams but all of the materials are folded up together in a single paste line at the bottom. Duplex construction is usually used in cases where the inner ply is a moistureproof or greaseproof material; the outer ply is purely for strength and printability. The same result is also possible in a laminated bag which can obtain some of its moistureproofness from the laminating agent, as well as the inner sheet; the outer ply again being for strength and printability.

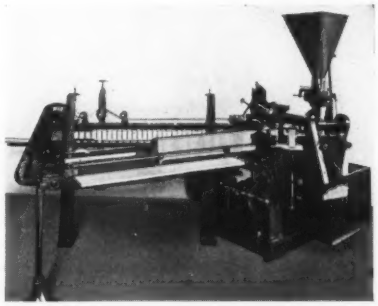
Bags and envelopes

QUESTION: What is the difference between a bag and an envelope?

ANSWER: A bag is made with no removal of material and has the cut-off lips at the top and the bottom on opposite sides. An envelope is made by removing by die-cutting some of the materials so that the resulting structure has the top and bottom lips on the same side. Envelopes are used in many cases where a uninterrupted printing surface is required on one side. For example, seed packages, etc., although in many cases bags and envelopes can be used interchangeably, depending upon adjustments of closing and feeding equipment.

Has Pneumatic's Slogan Been Put In Moth-Balls?

Pneumatic in war time has never for a moment lowered its standard. It has never laid aside its peacetime goal of "lower cost per container" for both wet and dry products. Though every man and woman of us is intent upon building vital war goods faster, better, we're still constantly on the alert for other needs.



This Pneumatic automatic Small Combination Machine, for bottom sealing, filling, and top sealing, handles up to 60 packages per minute.

To keep pace with the tremendous demands of global war, the tempo in our development laboratories—like that in every other department in our plant—has been stepped up many times. Inevitably, in building automatic machines for war use, we have uncovered important new points in designs and methods. These will serve the production of civilian goods after the war.

Today as always, the list of users throughout the nation of Pneumatic Packaging and Bottling Machinery reads like a social register of famous national brands. There you find, with hardly a single exception, the leading names in cereals, soaps, medicines, flours, desserts, teas, coffees, crackers—and scores of other products.

The immediate needs of our Army and our Navy come first.

But we have made provision in our present war production schedule to continue to give your orders for essential new equipment and replacement parts prompt and careful attention. Pneumatic Scale Corporation, Ltd., 71 Newport Avenue, North Quincy, Massachusetts. Branch Offices: New York, Chicago, San Francisco, Los Angeles.

PNEUMATIC

PACKAGING & BOTTLING MACHINERY

WASHINGTON REVIEW

by R. L. Van Boskirk

● **New Conservation Program**—The first big gun in the new conservation program launched by the Containers Division of the War Production Board was fired by Deputy Director E. F. Tomiska in a speech before the Purchasing Agents' Association of Northern California on July 12. He outlined a six-point program as follows:

1. Do not over package.
2. Use the largest container practicable.
3. Re-use every container to the fullest extent possible.
4. Do not hoard.
5. Plan requirements well ahead of required delivery dates.
6. Be honest with your regular supplier and with WPB in stating what your real difficulties are.

There will probably be 20 per cent less wood, 22 per cent less paperboard and 25 per cent less glass produced this year than would be needed if all manufactured goods were packaged according to established specifications, said Mr. Tomiska.

He warned that WPB will almost certainly introduce more positive controls than have been necessary heretofore and advised that the six-point program would do much to minimize the degree in which WPB will be forced to act. In addition, he offered a number of suggestions to help shippers adopt the plan. They were:

1. Re-inspect the design of containers, particularly fibreboard and make a sincere effort to re-design them to use less board.
2. Solicit the cooperation of the supplier. He can be helpful, for he knows the situation, and he has men who are experts on container design.

● **Wood Pulp Allocations**—As we go to press official Washington is all stirred up about the paper situation, including the Congressman who claimed that officials were using it as a means of censorship of anti-administration publications. Whether or not the Congressman was right is beside the point, because most authorities are extremely worried over the rate that wood pulp is being consumed in comparison to the amount produced.

Wood receipts are averaging 26 per cent less than in 1942 and inventories of pulp are decreasing at the rate of 34,000 tons a month. At the Wood Pulp Allocation Industry Advisory Committee meeting in June, it was found necessary to recommend reduction of pulp inventories to an estimated industry-average of less than 30 days as of July 31. Allocations of bleached sulphite and unbleached sulphate had to be supplemented by authorized shipments of other substitute grades to mills so as to provide even an estimated three weeks' inventory as of July 31.

Demands of the several claimant agencies for paper and paper products finally became so insistent and shortages so severe that WPB assumed control over the use of all grades of wood pulp under GPO M-93, amended June 29. In the future WPB will thus be able to direct each consumer of wood pulp as to the types of paper, paperboard and other products into which he may convert his allocated wood pulp.

Before this issue of Modern Packaging reaches its readers, WPB may have announced how it is going to determine the relative essentiality and clas ification of end products made from paper. Officials report that all printed stories to date are mere speculation. But the Containers Group has a strong case—the Army and Navy must have containers—and it takes lots of wood pulp to make millions of V-boxes.

● **Packaging Men Needed by Army Signal Corps**—The Signal Corps, Army Service Forces, needs men experienced in packaging various types of goods to work as civilian employees in the Philadelphia area where their skill and experience will be utilized in vital war work. The Army relies on Signal Corps equipment to "get the message through," and this equipment must be properly packaged to withstand the long journeys and hazards of global war.

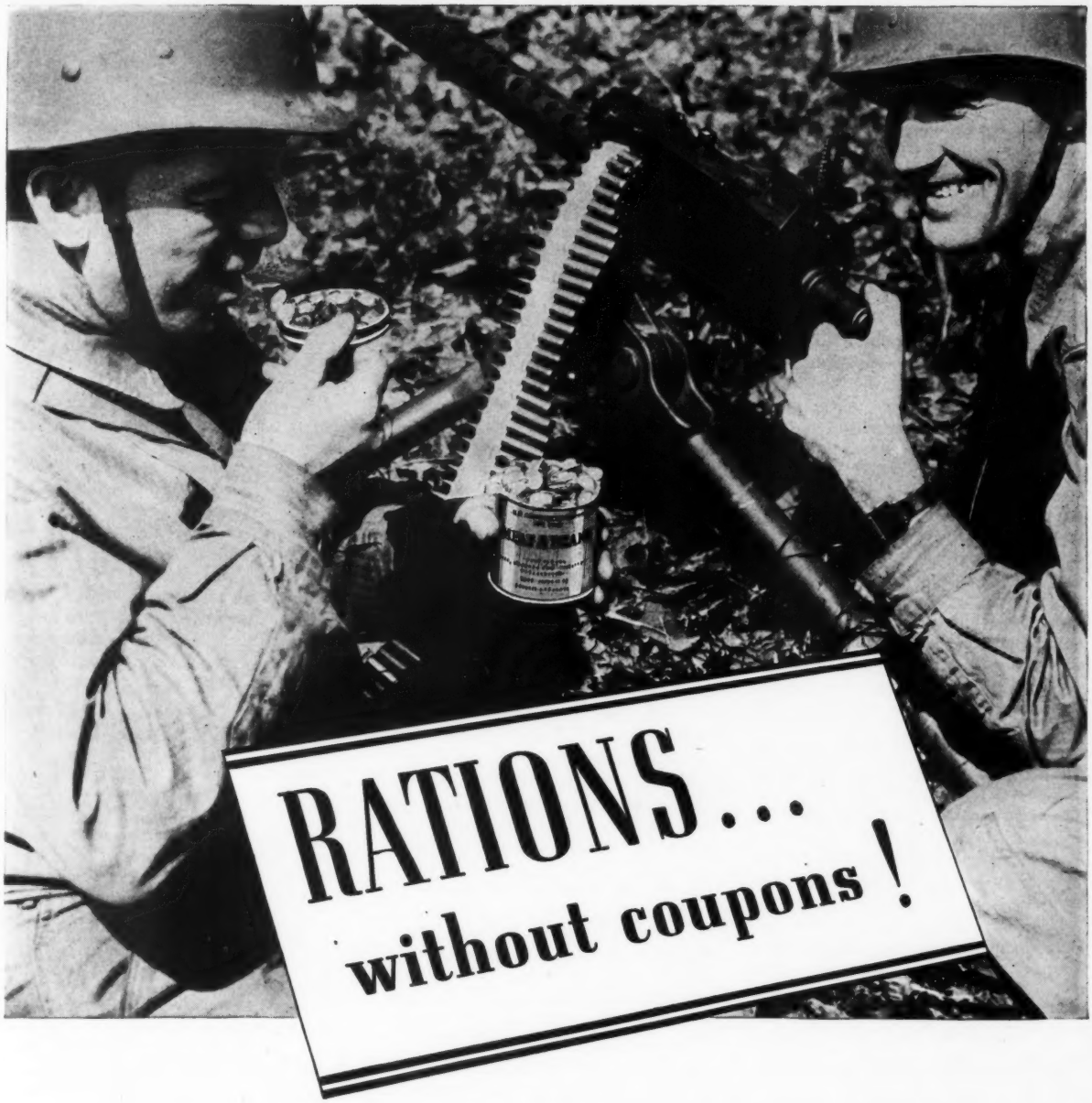
Many different communication items are furnished by the Signal Corps to our armed forces. Airborne and ground radio equipment, wire communication apparatus such as telegraph and telephone instruments, switchboards and vehicular and portable communication equipment are the major categories of the Signal Corps material.

Thousands of American manufacturers and hundreds of thousands of workers in the radio and communication industries are making these products which American soldiers require in all theaters of operations. But unless the equipment reaches them in good shape it cannot be put to efficient use. That is why the Signal Corps needs experienced packaging men now to make sure that American soldiers, wherever they are in the world, will receive shipments unharmed by the rough treatment to which they may be subjected in transit. Rain, cold, humidity, salt water, insects, sun and sand are some of the factors which must be reckoned with in packaging the valuable Signal Corps equipment.

Men experienced in general packaging work can quickly acquire a knowledge of Signal Corps packaging techniques. Men who have worked on containers, strapping, baling, interior packing, marking, crating and other activities in the general fields of packing, crating, shipping and exporting are urged to offer their services now. Salary will be dependent upon ability. Men with packaging experience should contact the Officer in Charge, Storage and Issue Agency, U. S. Army Signal Corps, 5000 Wissahickon Avenue, Philadelphia, Penna.

● **Glass Containers Deliver in the Pinch**—Issuance of supplementary order L-103-b (glass container quotas) served to point up the rapidly tightening situation in glass containers. Last November the industry was not operating at full capacity, but today WPB officials estimate that glass is between 25 and 30 per cent oversold. L-103-b limits use of glass containers in certain categories to either 65 or 80 per cent of the amount used from July 1 to November 1, 1942. It is aimed to take care of the heavy demand for glass in the food field by diverting glass away from less essen ial industries.

Paints, fly spray, oil, cleaner fluid and like materials users will be held to an 80 per cent quota. Wines, whiskeys, toiletries, shortening, coffee, cosmetics and similar items not listed in M-104 (closures for glass containers) because they were not allowed metal, are limited to 65 per cent, as are beer and soft drinks. WPB left room for flexibility by establishing Class IV with an indeterminate quota into which they may later put a product whose essentiality becomes imperative.



The men at the front never saw a ration book . . . nor counted any points . . . but the food they eat is as typically American as anything on sale at the corner store.

It's packed here in the United States in standard size containers that range in size from the individual "Iron Ration" all the way up to cans that will feed a whole platoon . . . and the Quartermaster Corps is as particular about the quality of the container as they are about what goes into it!

That's why everyone at Crown puts a little extra effort into seeing that the Crown Cans headed for the fighting fronts are as perfect as modern machinery and human skill can make them!

CROWN CAN COMPANY, PHILADELPHIA • NEW YORK
Division of Crown Cork and Seal Company • Baltimore, Maryland

★ ★ ★ ★ ★

CROWN CAN

The restrictions do not apply to containers for essential food and drug products.

The most critical time for glass container producers is June, July and August, due to the demand from perishable food processors, who are the biggest users Their requirements can never be determined in advance because crops vary and no canner can tell exactly what he needs. He seldom lays in a supply big enough for his full capacity and, if the crop of vegetables or fruit happens to be larger than anticipated, he must put in a hurry call for more containers. It is hoped that L-103-b will make it possible for container manufacturers to concentrate on their food container orders during the summer season. Medicines, too, are permitted containers without restrictions, but it is logical to believe that glass manufacturers will fill their large orders first. Thus food containers will get first call. It is not anticipated that drugs will suffer, but it is possible that some orders will be delayed.

The cosmetics industry will be affected considerably, although they probably have a good inventory on hand to supplement their 65 per cent quota. Those who are unfortunate enough to be caught short will simply have to curtail production or else use larger containers, unless they can find a substitute. There is no reason why they should lose dollar volume if they use larger containers, as the limitation order which permits a total cosmetic pack of 140 per cent of their 1942 base period. The four months' period ending November 1 is ordinarily the time of heavy production for the Christmas season and it is still uncertain how L-103-b is going to affect the business.

There have been rumors that the cosmetics industry might stage a drive for the return of bottles by consumers, but so far there seems to be little sentiment for any such effort in either the trade or government. Consensus is that the best way to handle used bottles is to let second-hand dealers pick them up, wash, clean and deliver them to local users.

The vicissitudes of the glass container industry have passed by largely unnoticed in the more glamorous atmosphere of heavy industry's armament production, and the argumentative debate over food production. Yet hampered as it has been by lack of fuel, devastating floods that closed various plants for several weeks and labor shortage that reduced capacity, there will be a record-breaking number of glass containers for 1943—practically double the number produced in 1938.

WPB officials believe that L-103, as amended, to standardize glass container sizes, helped in a large measure to accomplish this achievement. It made possible the production of more containers on the available equipment and the use of lighter weight packages permits manufacture of more jars from the same quantity of glass.

The glass industry has not been able to escape the irregularities of war time interruption any more than steel, plastics and most other industries. Various forces pull it back and forth into wide fluctuations that few men are wise enough to anticipate. For example, when edible oils were curtailed, mayonnaise, shortening and the like needed less glass for packaging. But the shortage of tin resulted in increased use of glass for such items as coffee, to say nothing of other foods. The closure situation added to the complexity of this picture. This constant pull in different directions kept manufacturers in the dithers, although no one can deny their capable performance in producing almost unbelievable quantities.

Without glass, the food situation today would be far worse than it is. It is true that there has been no wholesale conversion by packers from tin to glass production lines. Large packers have done a substantial amount, but the smaller plants were in no position to make quick conversions, even though new material for conversion lines had been made available.

Conversion has been in two categories:

1. Voluntary, by packers of essential fruits and vegetables. They were allowed unlimited quotas of tin cans, but converted anyhow in the interest of general tin conservation.

2. Other processors were forced to convert because their products, such as pork and beans, could no longer be put up in tin.

Further conversions are probably out for the duration because materials are unobtainable. The conversion development is interesting because of its future potentiality, but there are few men in Washington who will dare to make a guess on the final outcome. They say, however, that the hue and cry about breakage is overemphasized by small distributors—true, the percentage of breakage is higher than that of goods packed in tin, but it certainly is not excessive if the packer takes due precautions in his shipping room.

● **L-239 Restriction to Save Paperboard and Paper**—Order L-239 as amended June 22 by the War Production Board prohibits the manufacture of cartons used to carry soft drinks, in order to save paperboard for use by the armed forces and lend-lease and for packaging foods for civilians.

The amended L-239 also imposes restrictions, for the first time, on the use of solid and filled kraft paperboard in the manufacture of boxes and likewise imposes restrictions on the manufacture of wrappers for cigarette packages, cigarette cartons, certain wearing apparel accessories boxes and rubber heel boxes, and revises retail box quotas and general exceptions to the order to alleviate general inventory problems.

As a result of the L-239 restrictions, it is estimated that approximately 15,000 tons of paperboard and 2,000 tons of paper will be saved annually. Additional supplies of wood pulp and shipping space will also be saved.

Beverage boxes: Beginning June 22, 1943, the manufacture of any type of folding or set-up paperboard box for packing bottled non-alcoholic beverages was prohibited. Solid fibre or corrugated shipping containers are excluded and the restrictions do not apply to medicinal preparation, or to boxes already made up.

This prohibition on the manufacture of bottle "carry-outs" is expected to save 12,000 tons of paperboard. A substitute for the carry-out is expected to be utilized. However, it is believed that any substitute will, in total, consume substantially less boxboard. Existing large inventories of carry-outs will, if carefully used, serve to avoid any serious dislocation of home distribution of beverages during the present summer.

Kraft board and kraft liners: Use of solid and filled kraft board and kraft liners is confined to boxes for heavy or delicate items where it is needed for strength such as packaging metallic items—machinery, automotive, electrical and plumbing parts.

Cigarette wrappers: Printed wrappers for cup-type cigarette packages having a capacity of 20 cigarettes may not be made of paper heavier than specified, as follows:

Cigarette Size	Max. Paper Wt. Uncoated	Paper Wt. Coated
Standard	60 lb.	65 lb.
King	65 lb.	70 lb.

Cigarette cartons: No manufacturer may make any cigarette carton from paperboard thicker than .018 caliper.

Merchandise folders: Use of virgin wood pulp liner is permitted, for the first time, on the outside of small merchandise folders and a somewhat higher grade of paperboard is allowed.

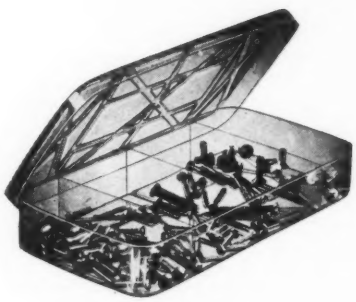
Wearing apparel accessories boxes and rubber-heel boxes: For packing men's or boys' belts, garters and suspenders, no box may be designed to contain less than six units or six pairs. No box for packaging rubber heels may be designed to contain less than six pairs of heels. And such boxes may not be made of paperboard thicker than .024 caliper or of paperboard better in quality than bleached manila lined news.

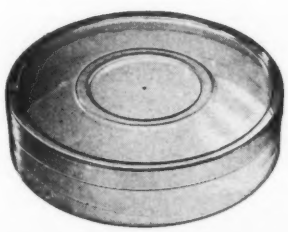
● **L-304 Prohibits Manufacture of Bottle Carry-out Bags**—Limitation Order L-304 issued by the War Production Board June 22, simultaneously with the amendment to L-239, prohibits the manufacture of any specialty bag particularly designed to be used as a bottle carry-out bag. The bottle carry-out bag uses more paper and other materials than other bags which could be used for the purpose.

● **Quantity Standardization in Retail Trade**—Letter Circular LC 726, recently released by the National Bureau of Standards, Department of Commerce, formally

STRONG LOW-PRICED TRANSPARENT UTILITY BOXES

STOCK MOLD or CUSTOM MADE





● **We manufacture a complete line of sturdy drawn transparent plastic boxes in all shapes and sizes. Typical models are shown in photo. Every size and shape can be manufactured to meet specifications. Rounds, squares and oblongs are all available, and inserts and partitions may be inserted to meet your requirements.**

These boxes are presently being used by the Army, Navy and Marine Corps for a great many purposes. They are used in war plants for storing and routing subassemblies and for small parts in repair and service departments. They give protection and visibility at the same time.

Production facilities are ample to handle large orders. Prices and samples will be sent on request.

End use of boxes must be permissive under WPB rules and regulations for sample requests and orders to be filled.

THE GREAT AMERICAN PLASTICS CO.

"Plastics Fabricated by Every Method Known to Industry"

INJECTION • EXTRUDING • COMPRESSION • TRANSFER MOLDING • HOLLOW MOLDING & FORMING • SHEETS • ROD-TUBES AND SPECIAL SHAPES

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sets forth guiding principles of quantity standardization in retail trade. These principles, with particular reference to retail packages, would be advantageous to the packers, the dealers and the consumer, if generally observed. They are recommended for observance by packers in all simplification programs. They would provide that commodities be offered for sale only in certain standard units of weight and measure, that only multiples and binary submultiples of the basis unit should be permitted, and that any series should be restricted to sizes that are "self-defining" as to quantity of content.

Copies of LC 726 are obtainable without charge from the National Bureau of Standards, Washington, D. C.

● **Plastic Closures**—The continuance of plastic closure manufacturing depends upon a successful conservation effort. The purpose of the allocation is to help make a limited amount of raw material available for more phenolic and urea closures. Allocations will be made only for short skirt type closures with a minimum amount of decoration. Deep caps will be allowed where there is a necessary function to perform such as prescription ware "pour-out-lip" bottles.

Specifically, a shallow skirt cap with a high dome would exceed the limit of a minimum functional weight cap. Deep skirted caps where shallow skirts would serve are outside the intended use. In short, any closure which requires more material than is necessary to make it function as a seal, in the strictest sense, may be considered as a non-qualified use of molding compound.

The problem of getting more caps out of a pound of material should be discussed with producers. They would be glad to join in a conservation program based on such points as:

1. The elimination of all decorative features which cause unnecessary weight.
2. The use of GCA 400 finish wherever possible.
3. The use of as small a neck opening on the container as permitted by the product and existing filling and handling equipment.

If the industries concerned voluntarily use their allocations in accordance with the above suggestions and make the most efficient use of the available materials, more drastic control measures may be avoided.

● **Getting into the Cork Stockpile**—Cork has been under allocation for more than a year because of the anticipated trouble of getting shipments from Spain and Portugal. But shipments have gotten through. Allocations have always been liberal, but a huge stockpile of government-owned cork has developed nonetheless. Now that cork is relatively free—much more free than metal—the War Production Board would like to see it used in place of metal wherever possible. There are also apparently plenty of facilities for making the cork stoppers or closures.

WPB wants to work on the problem of using stockpile cork in conjunction with industry. A representative of the Containers Division of WPB met with the Pharmaceutical Manufacturers' Industry Advisory Committee in Washington on July 9 and suggested the appointment of a task force to look into the possibility of using cork to replace metal closures. Similar suggestions have been and will be made to other industry advisory committees including the Proprietary Drugs Industry Advisory Committee, which met in Washington on July 13 and the Toiletries and Cosmetics Committee, which met on July 15.

● **New Edition of Government Manual**—The Summer edition of the United States Government Manual, a 707-page reference book on the creation and organization, functions and activities of the Federal Departments and Agencies, containing changes through May 15, is now available.

It may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., or at the U. S. Information Center, 1400 Pennsylvania Avenue, N. W. Single copies cost $1; subscription for three editions, $2.75.

● **Replacements for Tung Oil in Can and Closure Enamels**—The War Food Administration and the War Production Board on July 7 reduced the quantity of critical tung oil to be made available for the next year in the manufacture of metal food containers. Castor and treated linseed oils which have been found to adequately replace tung oil requirements in enamels and lacquers will be used as replacements wherever possible.

For the current quarter the new tung oil quota is 85 per cent of that used in food container enamels and lacquers during the same quarter of 1942. The quota for the next quarter will be 70 per cent and for the first and second quarters of 1944 will be further reduced to 50 per cent.

● **L-83 Governs Closure Sealing Equipment**—Interpretation 3 of Limitation Order L-83, as amended June 16, 1943, effective June 25, 1943, indicates that packaging and labeling machinery includes equipment used principally by packers for sealing glass containers with metal closures and that such equipment is therefore covered by Order L-83.

● **Tinplate for Can Manufacturers**—Direction No. 19 to CMP Regulation No. 1, issued by the War Production Board June 29, 1943, announced that tinplate for can manufacturers might be made in advance and held at steel mills for later shipment as directed by the can manufacturer, a customary procedure because of the seasonal nature of the canning industry. Direction applies to all producers of tinplate, short ternes, tin mill blackplate.

● **Textile Bag Industry Advisory Committee Appointed**—Price Administrator Prentiss M. Brown has announced the appointment of a new textile bag industry advisory committee of 12 members. Members of the committee met in Washington July 9 to complete their organization and elect officers. George M. Schurman, National Bag Corp., New York City, was elected chairman. The vice-chairman is Homer V. Howes, Bemis Bro. Bag Co. of Boston; Charles S. Sheldon, Chase Bag Co. of New York, secretary-treasurer.

Textile bags are made of burlap or cotton and are used principally for packaging grains, feeds, foodstuffs, seeds, fertilizers and similar commodities. Maximum manufacturers' prices for them are determined at present under a formula method which appears in MPR 151 (New Bags) which became effective May 25, 1942. Sellers other than manufacturers determine their maximum prices by applying mark-ups provided in the regulation.

● **Alternative Maximum Prices for Wide-Mouth Glass Containers**—Amendment 1 to Maximum Price Regulation 382, dated June 25, 1943, provides an alternative series of dollars and cents maximum prices for manufacturers of wide mouth glass containers. Only plants which can prove hardship under existing maximum prices established in MPR 382 may qualify for the higher ceilings and OPA must authorize application in every case.

The alternative ceilings, set up specifically for eastern and western areas, reflect maximum prices prevailing in the industry before the effective date (May 27, 1943) of the roll-back brought about in manufacturer's prices by the regulation. The alternative ceilings are about 5 per cent higher for eastern sales, and $7\frac{1}{2}$ per cent higher for western sales—which is identical to the amount of the roll-back.

Unprecedented demand for wide-mouth glass containers for the packaging of foodstuffs and evidence that a small number of producers will suffer financial hardship if they sell the container at the reduced prices fixed by the regulation were the factors responsible for the relief provision.

● **Conservation of Paper in Bags**—Conservation of paper in the manufacture of grocers' and variety bags to bring production in line with the amount of wood pulp which will be allocated for such bags was discussed at a meeting of the Grocers and Variety Bag Manufacturers Industry Advisory Committee and War Production Board officials in Washington recently. Possibility of eliminating types of grocers' and variety bags, which are now considered to be non-essential to the war economy, and the need for directing types of bags to be produced were discussed.

Last Minute News from Washington

• **Controls Tightened on Specialty Papers**—By July 22nd Amendment to Conservation Order M-286, use of glassines, greaseproof papers and vegetable parchment papers has been further restricted for packaging certain foods, candy, tobacco, cosemetics and various other products. WPB estimates that this will effect a saving of 10,000 tons of these specialty papers, or approximately 7¾ per cent of the present annual consumption.

Restrictions take effect July 23. After that date use of these papers is prohibited for wrapping or packaging sugar, flour, macaroni, noodles and similar paste goods; such dried foods as peas, beans, popcorn, rice, lentils and barley; unshelled nuts; certain spices; drink powders, excepting milk, chocolate and cocoa in half-pound or larger packages.

Also prohibited to use these papers for packaging or wrapping are: cosmetics, dentifrices, toilet materials, soap, yarns, threads, twines and cordage, except when oil impregnated; household dyes; sponges; all foods for animals; insecticides; rodenticides and other pest control products. Also smokers' articles including cigar and cigarette holders, pipes, cleaners and lighters.

These special papers are also banned as packaging or wrapping material for canned or bottled goods. Glassine, however, may be used as a band to protect labels on drug and pharmaceutical containers.

These three types of specialty papers are also under the amendment if used as secondary wraps or in conjunction with transparent materials such as cellophane for the packaging of tobacco and tobacco products, including cigarettes, chewing gum, candy and candy products, tea, coffee, potato chips and popcorn.

Stocks in the hands of users prior to July 23 are not subject to the restrictions of this amendment. Likewise excepted are materials in transit to a user, or materials on hand with a manufacturer or distributor, ready for a specific use prior to that date.

Army requirements for packaging of ordnance materials, as well as for the packaging of subsistence materials, explain the issuance of this amendment.

• **To Expedite Pulpwood Construction**—Topside recognition of the seriousness of the pulpwood shortage is evidenced in Donald Nelson's appointment of A. B. Hansen as deputy director in charge of expediting pulpwood production. Mr. Hansen will advise and coordinate the activities of various government branches with a view to increasing pulpwood output, the sharp decrease of which has caused alarm in packaging circles. The appointment of Mr. Hansen, who is president and general manager of Northern Paper Mills, Green Bay Wis., is favorably regarded in the paper industry.

• **Revision of Tinplate Quotas** — Approximately seven million additional cases of canned baby foods, milk products and certain canned fruits and vegetables are expected to become available for civilian consumption under revised tinplate quotas announced by WPB today. These increased packs, however, will be offset by reduced packs of other fruits and food products and will not increase the total 1943 civilian pack of canned foods.

The increased canning of specified foods is made possible under an amendment to Conservation Order M-81, requiring manufacturers of cans to employ electrolytic tinplate methods after September 30. A saving of approximately 6,000 tons of tin a year is anticipated as a result.

In view of shortages in the crops of certain fruits and other commodities, the War Food Administration recommended that WPB increase tin quotas for canning more available food commodities.

Can manufacturers are directed by WPB to use electrolytic tinplate, with a maximum coating weight of 0.50 pounds per single base box, exclusively in the manufacture of cans for a large number of food products, beginning Sept. 30, 1943 and thereafter.

Electrolytic tinplate is produced by a relatively new process, developed to conserve tin, the Containers Division of WPB stated. By means of electrolysis, a coating of tin is deposited on cold-reduced steel strip. The tin is

then fused and cooled. The result is a product which has a thinner, yet highly uniform, smooth, lustrous coating of tin. This coating provides adequate protection for many packs and the coating also deep draws and solders satisfactorily.

Effective immediately, manufacturers of cans are directed to use 0.50 electrolytic tinplate or chemically treated blackplate to the greatest extent available, instead of 1.25 hot dipped tinplate in manufacturing cans for some additional products including cherries (RSP, frozen only) and soups.

• **To Relieve Glass Shortage** — A thorough cellar-to-attic search for all empty beverage bottles was recommended today by WPB's Conservation Division as it urged homemakers to collect all "empties" and return them promptly to local stores.

In view of the vital need for facilities and fuel and the shortage of manpower, production of bottles for replacements represents an unnecessary drain on essential war production, which could be greatly relieved by nation-wide cooperation in this program.

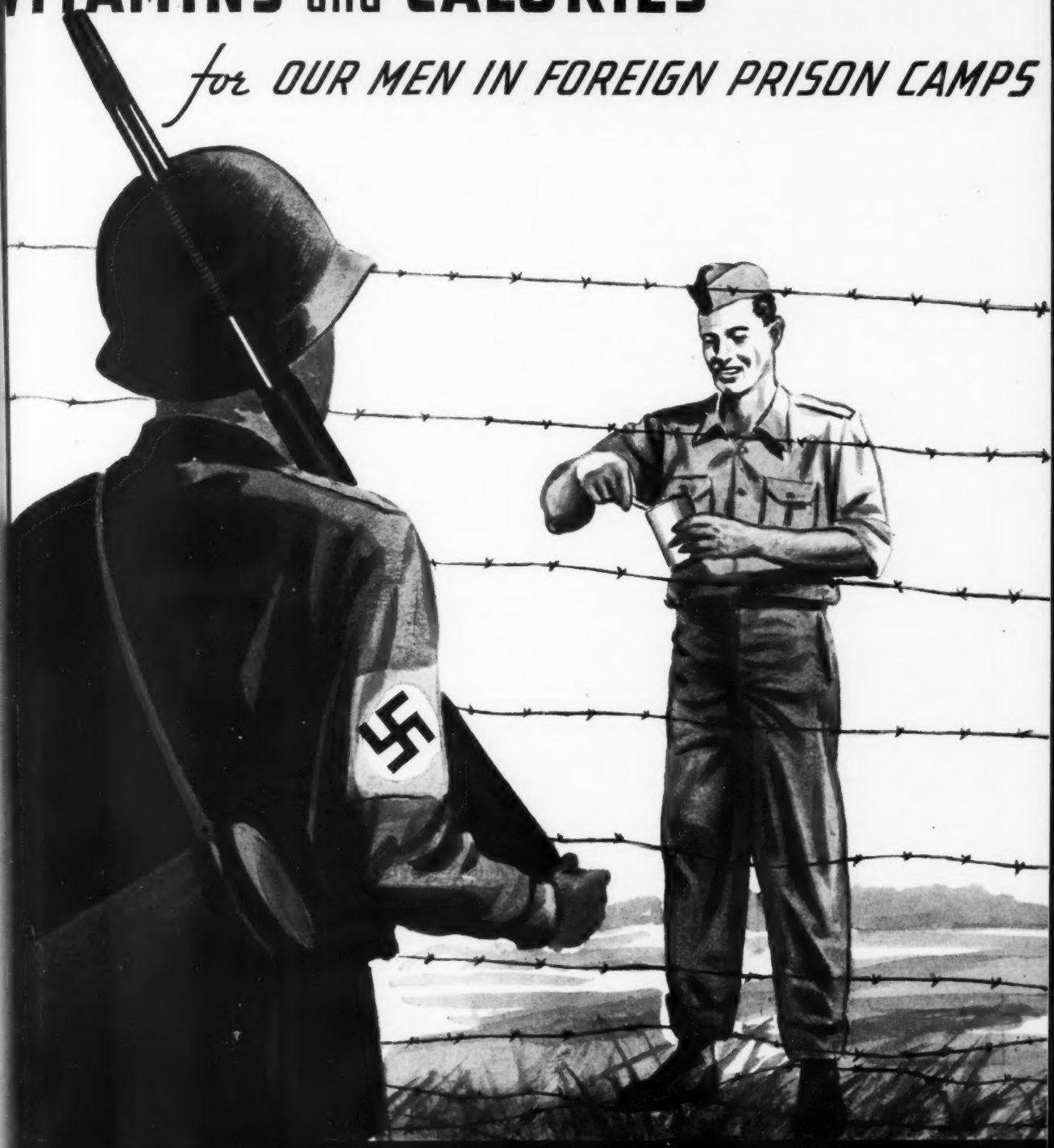
In spite of the shortage, an adequate supply of glass beverage containers would result, if the hidden and inactive reserve of bottles was recovered. Upon return to the bottling plants, the bottles undergo thorough cleansing and sterilization, and are then placed back to work. The average life of a returnable bottle is about thirty round trips, each of the millions of "empties" stored in American homes actually represents potentially thirty replacements. Return into circulation of the containers, many of which have been gathering dust for months or years, would provide a substantial stockpile for the beverage industries.

Local campaigns have started in various centers in response to this recommendation. The September issue of Modern Packaging will endeavor to report on the results.

• **Castor Oil Recommended Substitute**—E. V. Ladd, chief of the Oil Section in the Food Distribution Administration, late in July, advised the substitution of dehydrated castor oil or processed linseed oil to take the place of tung and oiticica oils used in the enamels or lacquers of food containers. This advice grows out of the present critical shortage of the imported oils as compared with the plentiful stocks of castor oil as of this writing. One manufacturer of food containers remarked that the use of castor oil was a return to the practice of twenty years ago and added that no effect would be noted other than a slight decrease in the appearance, of no consequence in the function of the container.

VITAMINS and CALORIES

for OUR MEN IN FOREIGN PRISON CAMPS



MARGARINE is packed in prisoners' packages sent abroad by the Red Cross and is sent over-seas under our lend lease program. Millions of cans are produced by The Heekin Can Company to carry margarine to these men and women whose very lives depend upon our giving them sufficient fats, vitamins and calories. Again proof, that tin does a better job when a better job is needed. Someday you'll need tin cans . . . to carry your peace time products to market. When that time comes, remember that Heekin lithographed colors on metal are outstanding.

THE HEEKIN CAN COMPANY, CINCINNATI, OHIO.

Heekin Cans

Lithographed

WITH HARMONIZED COLORS

U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 10 cents each.

RADIO TUBE CARTON. W. A. Ringler (to National Folding Box Co., New Haven, Conn.). U. S. 2,320,396, June 1. A radio tube carton including in combination an outer tubular sleeve having enclosing side wall panels, an inner tube supporting strip with top and bottom platforms supporting the ends of the tube with side wall hingedly connected to said platforms along one side.

BOX. J. P. Shearer (to Bloomer Bros. Co., Newark, N. J.). U. S. 2,320,665, June 1. A folding box of hexagonal shape comprising paperboard stock, cut, scored and folded to provide opposite top and bottom walls of hexagonal shape.

CONTAINER. W. L. Ullrich, Washington, D. C. U. S. 2,320,764, June 1. A container made up of laminated layers of material forming side walls, a liner engaging the innermost layer, metallic reinforcing strips secured to the laminated layers and protruding beyond the edges thereof.

BREAD WRAPPING MACHINE. T. Jensen (to American Machine & Foundry Co., a corp. of New Jersey). U. S. 2,320,362, June 1. Combined with a wrapping machine a set of tuckers for tucking the ends of a wrapper enfolding an article.

MACHINE FOR COATING ABSORBENT SURFACES. F. E. Drummond (to New Wrinkle, Inc., Wilmington, Del.). U. S. 2,320,513, June 1. An apparatus for applying coating compositions onto articles in the form of a film layer.

WRAPPING MACHINE. J. A. Heckman (to Miller Wrapping & Sealing Machine Co., Chicago, Ill.). U. S. 2,320,865, June 1. A wrapping machine with a package feeding carrier adapted to transport packages toward the wrapping position and thence to a discharge position after wrapping.

METHOD OF MAKING RETRACTILE ARTICLES. R. Picard and R. Fays, Paris, France (vested in Alien Property Custodian). U. S. 2,320,381, June 1. A method of forming retractile articles having sufficient plasticity and extensibility in the moist or gel state to permit stretching thereof, being made of water insoluble cellulose acetate.

PRODUCTION OF SHEET MATERIALS. P. R. Hawtin and C. Gardner (to Celanese Corp. of America, a corp. of Delaware). U. S. 2,320,431, June 1. Process for the production of sheet materials from an organic derivative cellulose in a volatile organic solvent.

CASTING SHEET MATERIAL. J. H. Rooney, P. R. Hawtin and D. C. Macpherson (to Celanese Corp. of America, a corp. of Delaware). U. S. 2,320,473, June 1. Process for the production of sheets of thickness at least 0.01 in. from a solution of film-forming substance in a volatile solvent, which consists in building up the sheet on a support traveling through a heated evaporative atmosphere by the successive deposition of layers of said solution.

SEAT COVER PACKAGE. J. C. Thomasma, Chicago, Ill. U. S. 2,320,955, June 1. A sanitary paper pack of disposable toilet seat covers comprising an apertured disposable supporting backing.

PACKAGE SEALING AND OPENING MEANS. J. C. Dense and J. H. Craft, Jr. (to Defender Photo Supply Co., Inc. Rochester, N. Y.). U. S. 2,321,066, June 8. Package sealing and opening means comprising a continuous strip having openings arranged at intervals in alignment endwise thereof and between its opposite edges, adhesive material on one face of the strip and a rip-cord extending endwise of the strip across said openings.

CONTAINER. H. F. Cox and J. Felber (to American Can Co., New York, N. Y.). U. S. 2,321,011, June 8. A container for liquids, comprising a tubular fibre body having a substantially flat fibre top end member secured thereto in a laterally projecting liquid proof end seam joint, said top end having a filling and dispensing opening.

CONTAINER. C. G. Preis (to American Can Co., New York, N. Y.). U. S. 2,321,042, June 8. A container for liquids, comprising a tubular body having a flat top end member secured to an end thereof in a leak-proof end seam joint, said top end member having spaced filling and dispensing openings therein.

CONTAINER. R. H. Seymer (to American Can Co., New York, N. Y.). U. S. 2,321,050, June 8. A container for liquids, comprising in combination a tubular container body, a flat top end member for said body having a filling and dispensing opening and an integral double layer closure unit folded upon itself

CELLULAR CARTON HAVING SELF-ROTATING CROSS PARTITIONS. E. E. Holwick, Laguna Beach, Calif. U. S. 2,321,209, June 8. A blank for a carton comprising a sheet cut, scored, folded and secured to produce a shell with continuous bottom and longitudinal partitions.

SHEET-METAL CONTAINER. J. Mills and C. W. Lang (to Continental Can Co., Inc , New York, N. Y.). U. S. 2,321,408, June 8. A sheet metal container with body portion and cover and adapted to be seamed thereto for closing and sealing.

CARTON STRUCTURE. K. C. Ferguson (to Inland Container Corp., Indianapolis, Ind.). U. S. 2,321,473, June 8. A wall stabilizing end closure of re-entrant type for a tubular container structure having four sequentially connected walls.

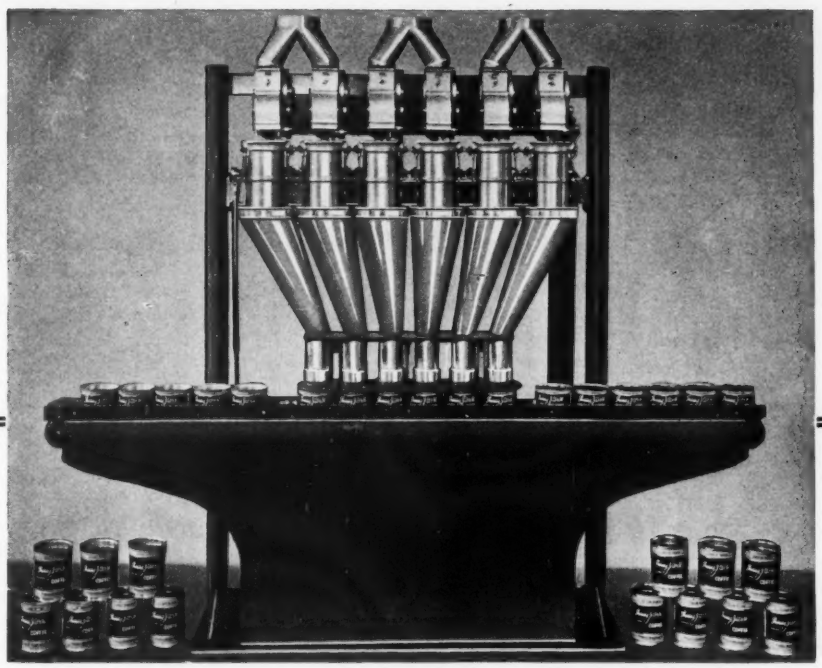
CONTAINER. E. W. Wells (to Container Corp. of America, Chicago, Ill.). U. S. 2,321,536, June 8. A container with bottom, four interconnected walls, a rigid, rectangular, reinforcing frame of angle material having a vertical web extending entirely around the walls.

CLOSURE CAP FOR COLLAPSIBLE TUBES. G. L. Lateur, San Francisco, Calif. U. S. 2,321,031, June 8. A dispensing device for a collapsible tube containing a plastic material, a cylindrical member having a longitudinally extending slot therein, the outer surface of the member disposed near the slot being flattened to materially lessen the thickness of the longitudinal edges bordering the slot and to define two longitudinally extending flattened surfaces.

CUP-MAKING MACHINE. G. M. Merta, Los Angeles, Calif. U. S. 2,321,407, June 8. A cup-making machine with cup-forming mandrel having gripping means associated therewith, feeding means arranged for feeding a blank to said gripping means to be formed into cup.

MEANS FOR PACKAGING SHEET MATERIAL AND THE LIKE. D. A. DiCicco (to The American Steel & Wire Co., a corp. of New Jersey). U. S. 2,321,187, June 8. A package for shipping sheet material and the like, comprising a rectangular-shaped body member for housing the material with several longitudinally extending strengthening arms.

COLLAPSIBLE PAPER CONTAINER. E. H. Gruger, Seattle, Wash. U. S. 2,321,139, June 8. A paper container for liquid comprising a rectangular receptacle, two sloping top members converging to an apex and two gable-shaped end members each folding along M-shaped lines.



THE PACKOMATIC "CHIEF"

AUTOMATICALLY WEIGHS AND FALLS AT 60 OR MORE PER MINUTE

Above machine is one of many Packomatic Scales designed to fill various products into cartons, round paper cans, glass jars, or tin cans of various sizes within reasonable height range.

Built to receive container from conveyor or overhead chute and to deliver container onto closing machine conveyor. Compact and efficient in operation. No regular operator required.

We also manufacture many other types of scales for handling a wide variety of products, equipped with specially designed feeding mechanism for best performance depending upon the product.

For over twenty years we have designed and built packaging machines and scales of all types, and our vast experience is yours for the asking. All inquiries are handled confidentially. A Packomatic man will call upon request.

OTHER PACKOMATIC MACHINES

Shipping Case Sealing Machines
Consecutive Numbering Machines
Carton Sealing Machines
Auger Packers
Paper Can Tube Gluers
Paper Can Shrinking Machines
Paper Can Labeling Machines
Shipping Case Printing Machines
Carton Making Machines
Automatic Volumetric Fillers
Dating Devices
Paper Can Set-Up Conveyors
Paper Can Tube Cutters
Paper Can Label Dryers

★

REPRESENTED IN ALL PRINCIPAL CITIES FROM NEW YORK CITY TO SAN FRANCISCO

We can only supply equipment to essential industries who can furnish suitable priority. In other industries we are now filing orders for Post-War Deliveries.

BUY MORE WAR STAMPS AND BONDS. BUY THEM EVERY WEEK OR MONTH

PACKOMATIC

PACKAGING MACHINERY

J. L. FERGUSON COMPANY, JOLIET, ILLINOIS

REPRESENTED IN ALL PRINCIPAL CITIES

Plants and People

J. K. McDermid has just announced the appointment of George M. Hobart as vice-president and general manager of Somerville, Ltd., London, Canada. Mr. Hobart succeeds the late vice-president Duncan H. McDermid.

George M. Hobart

William S. Richardson, general manager of the industrial products sales division, The B. F. Goodrich Co., has been elected chairman of the OPA Mechanical Rubber Goods Industry Advisory Committee. The committee, which the B. F. Goodrich official will head, is composed of representatives of all rubber companies engaged in the manufacture of mechanical rubber goods totaling many thousand items. The committee will establish a working relationship between the OPA and the industry to stabilize wartime prices and make recommendations to OPA on new developments. Mr. Richardson has been with B. F. Goodrich since 1926.

George E. Dyke, president of Robert Gair Co., Inc., New York City, recently announced that Philip S. Bolton has joined the company as research director.

The Technical Assn. of the Pulp and Paper Industry will sponsor a technical service conference for the benefit of all paper manufacturers and paper users engaged directly in the war effort. This conference will replace the fall meeting of the association and will be held at the Palmer House, Chicago, Ill., September 21–24. It will be, it is announced, a meeting for the representatives of the armed forces with the representatives of the paper industry present to contribute their best advice in dealing with the government's paper problems. All branches of the industry are invited to participate. These branches include the various types of paper and paperboard manufacturers, paper converters, container companies, coaters, adhesives makers and the major paper and paperboard consuming industries. In fact, all branches of the industry that are making products used by the army, navy and other claimant agencies are included. The army and navy will have an exhibit, showing how paper and containers are used by these services and there will be a large group of officers of the Ordnance, Engineer Corps, Signal Corps, Quartermaster Corps, Chemical Warfare Service, Medical Dept. and the various branches of the navy to discuss their current paper and packaging problems.

Employees of the two Lancaster, Pa., plants of the Armstrong Cork Co. were given a White Star recently in recognition of meritorious services on the War Production Front. The star is to be added to the Army-Navy "E," awarded last Nov. 30. Production of war materials was started at the Armstrong plants in 1939, shortly after the outbreak of hostilities in Europe.

Workers of the Plastics Division of the Celanese Corp. of America at the Newark, N. J., plant were recipients of a telegram of congratulations from General H. H. Arnold, Commanding Officer of the American Air Forces. General Arnold wrote: "American men and women on the production line may well be proud of their record of achievement in the building of 100,000 aircraft. The Army Air Force is thankful to every one of you. You are making Victory possible."

Paul Godell, vice-president of the Arvey Corp., reports that the Navy Bureau of Aeronautics has sent a telegram of appreciation to the employees of the Arvey Jersey City plant. The telegram praises their fine production record on parts used in turning out certain outstanding airplanes that have contributed to many of the navy's victories.

A new division of the Appliance & Merchandise Department of General Electric Co., to be known as the Resin and Insulation Materials Division, has been formed with E. L. Feininger as manager, it has been announced by H. L. Andrews, vice-president in charge of the A. & M. Department, Bridgeport, Conn. The new division will be responsible for the manufacture, engineering and sales of insulating varnish, glyptal, varnished cloth and mica products.

Officials of The Dow Chemical Co. report that full scale production has been achieved six weeks ahead of schedule in the first unit of its new styrene plant located in Los Angeles.

At a meeting held recently in New York City of the Packaging Machinery Manufacturers Institute ten new members were added to the Institute's membership list. They were: Kingsbury & Davis Machine Co., Contoocook, N. H., C. H. George; Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich., Boyd H. Redner; Hudson-Sharp Machine Co., Green Bay, Wis., Horace C. Baker; International Filling Machine Corp., Petersburg, Va., E. C. Longmore; John W. Ayers & Son, Bloomfield, N. J., M. I. Ayers; Heat Seal-It Co., Philadelphia, H. L. Reitzes; J. C. Bruno Filling Machine Co., Binghamton, N. Y., Joseph C. Bruno; Container Equipment Corp., Newark, N. J., Fred W. Kucklinsky; R. A. Jones & Co., Inc., Cincinnati, Wickliffe Jones.

Expanding its use of Goodyear's Pliofilm to airplane engine "spares" in addition to its current use on new engines, the U. S. Army Air Forces has placed the largest order ever received for the transparent moistureproof wrapping material. Goodyear Tire & Rubber Co. officials announced that the new order will provide sufficient Pliofilm for wrapping thousands of engines over a period of nearly a year at air bases and depots in many parts of this country and abroad.

Art Jones, for the past seven years sales representative of the Menasha Products Co. in Washington and Oregon, has resigned his position to enter the U. S. Merchant Marine. For the time being, a successor to Mr. Jones will not be appointed and the company's business in the northwest will be handled by the branch office in San Francisco. Hugh Hicks of that office will supervise sales.

The E. J. Kelly Co., printing ink manufacturers of Kalamazoo, Mich., announce the appointment of L. J. McDermott as vice-president and Jack Beierwaltes as sales manager.

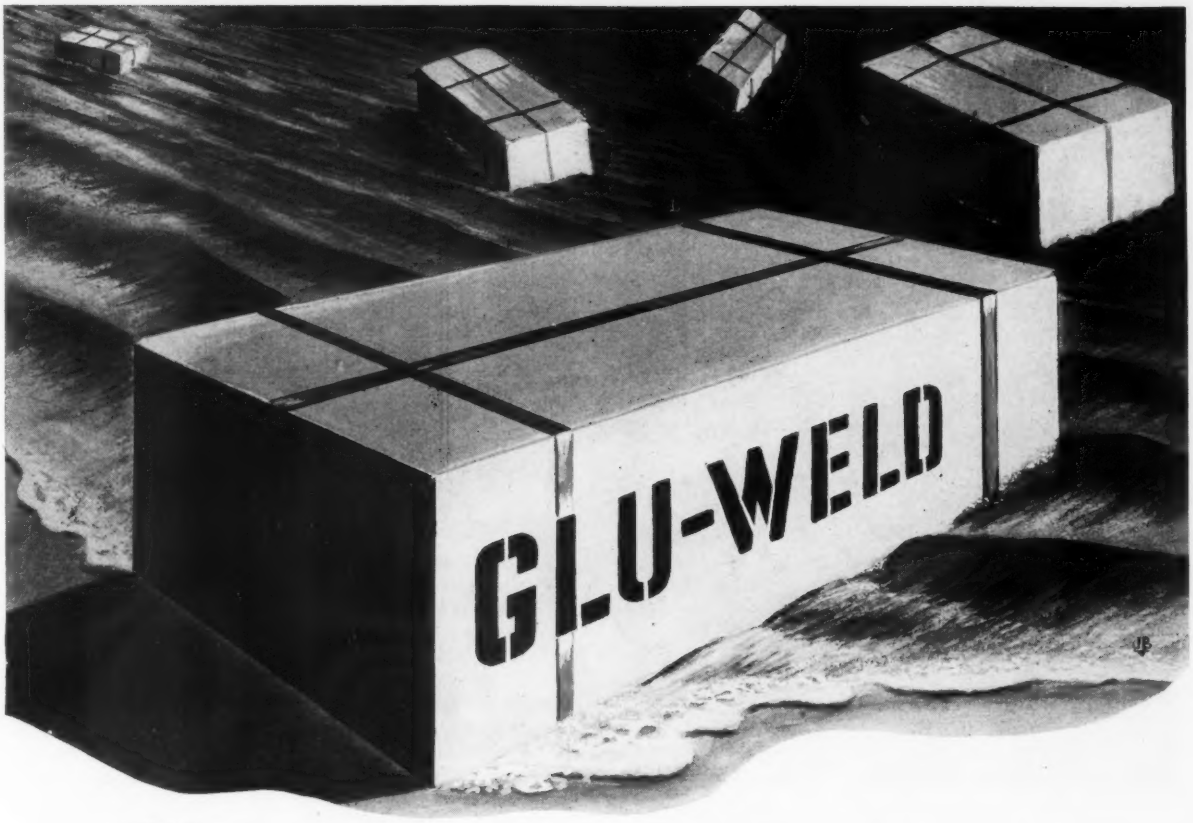
OBITUARY

Earl L. Eckard, manager of the Michigan Lithographing Co.'s office in Indianapolis, died June 21.

James E. MacMurray, founder and former chairman of the board of Acme Steel Co., Chicago, died July 1. Mr. MacMurray held the presidency of Acme Steel Co. for 38 years and then became board chairman until his retirement several years ago.

Alfred F. Harris, chairman of the Board of the Harris-Seybold-Potter Co. and pioneer in the successful development of the offset lithographic press, died at his home in Cleveland, Ohio, on June 26, at the age of 83.

John H. King, Philadelphia branch manager of International Printing Ink since 1935, died July 4.



WEATHERPROOF ADHESIVES . . . *for* WATER-RESISTANT PACKAGES

● Manufacturers are depending more and more on GLU-WELD adhesives for sealing and manufacturing weatherproof containers. They are used for sealing waterproof duplexed stocks and "V"-type solid fiber cases, manufacturing ration boxes and other war-used folding cartons as well as waterproof bags.

OVERSEAS SHIPMENTS

Especially designed to meet the needs of packagers making overseas shipments, these fine adhesives offer many potential uses for post-war industry. They are stronger, more water-resistant and easier to apply than adhesives available before the war.

We will be glad to send you samples of GLU-WELD adhesives and request that end use information be submitted because certain ingredients of GLU-WELD adhesives are under Allocations restrictions.

GLU-WELD IS AVAILABLE

IN THE MIDWEST

The F. G. Findley Company

1230 NO. 10th STREET • MILWAUKEE 5, WIS.

IN THE EAST

Union Paste Company

1605 HYDE PARK AVENUE • HYDE PARK, MASS.

Equipment and Materials

TESTER FOR SHEAR-HARDNESS

To assist in the determining of the adequacy of surfaces finishes, the Taber Instrument Corp., North Tonawanda, N. Y., has brought out a new and improved attachment for its Taber Abraser. The abraser has been manufactured for a number of years and is a standard instrument for determining the resistance to rubbing abrasion of finishes, plastics, textiles, leather, paper, etc. The new attachment for this abraser provides an accurate method to measure the toughness quality of surface finishes and their ability to resist digs, scrapes and similar abuse from actual service not considered normal wear.

Such a tester is particularly important now when many manufacturers have had to find substitutes for surface finishes which look like lacquers, varnishes and paints. The instrument can measure the toughness of the substitute to resist accidental scrapes and digs which may be considered over and above those it would normally receive.

The instrument operates as follows: Small test samples are laid on a circular table that revolves under a cutting tool. A weight slides along the calibrated beam until it is finally located in the position where the correct load permits the tool point to cut a groove in the surface finish without digging through to the base plate. Several grooves are made in the surface and the most representative one is selected to measure to the nearest thousandth of an inch. A special Taber micrometer is furnished to make the measurement. The shear-hardness of the specimen is calculated by taking the reading from calibrated beam at the forward edge of the adjustable weight which together with the width of groove determines the result by a mathematical formula. Only a small 4 sq. in. sample is required to make the easy and quick test.

In addition, the abraser efficiently and accurately evaluates resistance of surface finishes to rubbing abrasion. Scientific wearing action by the abrasing wheels on the specimen clamped to the revolving turn-table is measured in terms of "wear cycles" which are automatically totaled on a built-in counter.

NEW MAINTENANCE TOOL

A slitter wheel grinder is being made by Johnstone Engineering & Machine Co., Downingtown, Pa., which, it is said, will recondition any standard 3-in. score cut slitter. It is a tool which saves manufacturers the return of slitter wheels to makers for reconditioning, thus effecting savings in time and shipping and the stock of wheels to be kept on hand. It also releases a lathe for those who have been using a lathe with grinder attachment. The slitter grinder has the motor and drive in the base, providing safety and protection from dust and damage. It may be plugged in any standard lighting circuit. It weighs 170 lbs. and will fit on a portable stand or work bench.

ZINC PLATED STEEL

American Nickeloid Co., Peru, Ill., announces a practical alternate for more critical metals in its zinc plated steel. Zinc has been recognized as an excellent coating, since it will not rust and resists corrosion. When electroplated to a steel base, a galvanic action takes place between the zinc coating and the basic steel which imparts additional corrosion resistance to the steel. Electro zinc plated steel sheet, for many war applications, is a satisfactory substitute, the company states, in performing the work of nickel, tin, aluminum, brass or copper, or pinch-hitting for vital plated metals which formerly used tin, nickel or cadmium finishes.

PLASTIC HINGES

Hinges of the piano-type, made of cellulose acetate butyrate molding composition, extruded in continuous lengths, are being manufactured by the Plastic Process Co., Hollywood, Calif. The plastic hinges weigh considerably less than those of metal and offer new design possibilities to the makers of lightweight portable equipment. At the same time, they are strong enough to be suitable also for articles of relatively heavy construction.

These plastic hinges may be cut to any desired length and easily assembled to other materials by means of adhesives, rivets or screws. They are able, the manufacturer reports, to withstand long hard wear without denting, chipping or cracking and their smooth, lustrous surface is rust-proof and dirt-resistant. They are made in ivory color or in other colors upon request. The hinges have been tested and approved by a major aircraft producer and they are now being used on airplane tool boxes, oil immersion boxes, radio, map and chart cases.

WATERPROOF LINING

A waterproof lining which is being used for export boxes and cartons and approved by various government departments is manufactured by Cincinnati Industries, Inc., Philadelphia. The lining is X-crepe waterproof paper and requires for sealing only a simple cold seal. Various uses to which the lining has been put are for the packaging of instruments, ammunition, food, radio parts, aircraft parts, textiles, tobacco and machinery parts.

STENCIL MACHINE

As a wartime measure for the duration, Marsh Stencil Machine made by Padco Corp., St. Louis, has a new, bright blue-gray spatter finish. The new finish meets government specifications. It's designed to withstand the rigors of varied climatic conditions aboard ships, in camps, in the field, depots and industrial shipping rooms. Operating mechanism has sturdy construction.

Sealed

TO DEFY THE ELEMENTS

BLOW, cold winds of the Arctic! Pour, drenching rain of the tropics! Scorch, blazing sun of the desert!

Food, ammunition, spare parts, and supplies will still get through *undamaged* to our Allies and far-flung battle lines . . . thanks to efficient packaging.

NATIONAL'S WEATHERPROOF GLUES seal *out* the destructive forces of nature . . . seal *in* precious cargos of the "Arsenal of Democracy."

Trust your Victory Case and waterproof liner sealing work only to tried and true adhesives, *warranted* to meet Government specifications.

FREE BLUEPRINT

Charts adhesive recommendations for Overseas Packing under Govt. Specifications. Covers sealing of Victory Cases and Duplex Liners, labeling fiber and wooden boxes, etc. Request copies on your letterhead.

The Strongest FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS *Bond of All*

NATIONAL ADHESIVES

DIVISION OF

NATIONAL STARCH PRODUCTS INC.

820 GREENWICH STREET, NEW YORK

Chicago · Philadelphia · Boston · San Francisco · and All Principal Cities

For Your Information

The recently proposed program for the simplification of paper boxes used by manufacturers of cosmetics and toilet preparations has been accepted by a very large percentage of the industry. Accordingly the National Bureau of Standards has decided to promulgate this program officially. Copies of the recommendation may be obtained from the Division of Simplified Practice, National Bureau of Standards, Washington 25, D. C.

Recently elected officers of the Canadian Paper Box Manufacturers' Assn. are: Ed. Long of A. E. Long & Co., Ltd., Toronto, president; J. Gordon McDermid, Somerville, Ltd., London, Ontario, secretary-treaurer; and C. V. Hodder, secretary. A feature of the association's 28th Annual Convention, held a short time ago in Toronto, was the exhibition of what has been done in the packaging industry to meet war conditions. Shown were packages developed to meet shortages of raw materials, packages designed to carry war supplies and direct war materials being produced by the industry.

Cooperating in a movement to standardize the labels for glass jars, the Label Manufacturers National Assn. and the leading manufacturers of labeling machines have surveyed the industry and have decided that standard practice requires that the glue lap of the wrap-around type of jar labels shall be placed at the left end of the label. By left end is meant the end at the reader's left. The need for standardization is due to the fact that many wholesale grocers and other distributors purchase labels before they know where and by whom the goods will be packed. This means that the labeling machines should be set up to suit the labels that are to be used on them. Since practically all jar-labeling machines are built to use labels made with the left-end glue lap, it is desirable that only such labels be supplied.

The War Department has designated Sept. 15 to Oct. 15 as the period for sending Christmas packages overseas; for naval personnel the period extends from Sept. 15 to Oct. 31. For the period in question, army restrictions requiring a request from the recipient will be suspended. Packages for men overseas must not exceed 5 lbs. in weight, 15 in. in length or 36 in. in length and girth combined. They must be marked "Christmas parcel" and must be packed in wooden, metal or solid fibre boxes or in strong double-faced corrugated fibre boxes and securely tied. Receipt will be expedited if the packages are tied to make inspection easy.

Burnham and Morrill Co. of Portland, Maine, announce that their B & M Brick-Oven Baked Beans are again to become available in limited quantities. Several months ago Modern Packaging carried a story on B & M baked beans and the company's explanation through labels and promotional material of their product's temporary absence from store shelves. The Burnham and Morrill Co. now states that it will still supply free recipes for home-baking of beans to all who request them. These recipes will continue to enable women to enjoy "genuine New England baked beans during those periods when they are unable to get B & M Brick-Oven Baked Beans in the stores," the company explains.

Basic Marketing Chart of the Unites States—1942 Edition. Research Co. of America, New York City. $2.50. This chart follows the Census Bureau pattern and reports, in 49 separate columns, the following data for each of the nation's 9 geographic divisions and for each of the 48 states and the District of Columbia. All figures are projected in percentages to provide a simple working base for comparative analysis: Population, retail sales, income tax returns per thousand persons, population per passenger car, national rank of states, distribution of families, sex groups, age groups, tenure status of homes, housing facilities and equipment, average home monthly rent or rental value, educational attainment of population. Data sources are indicated in the chart to facilitate gathering of more detailed information, where available, on counties and minor civil divisions, where such supplemental information is required.

Joel Y. Lund of the Packaging Institute, Inc., 342 Madison Ave., New York City, announced the formation of a committee to assemble and standardize testing methods on packages and packaging materials. This committee and its chairman, Charles A. Southwick, Jr., have outlined the most important phases of this work, but they would like to have help from the members of the Institute. The committee is interested in data and detailed descriptions of the method used by members in performing the tests and suggestions as to performance levels and any other tests which should be considered. Bulletin issued June 29 of the Institute outlines the information desired. Address: Chairman, Testing Committee, Packaging Institute, Inc., 342 Madison Avenue, Room 830, New York 17, New York.

Plastics of every description are being displayed at the Art Gallery of the School of Fine Arts of Yale University. The exhibit continues through August 14. The uses of plastics in war form the most impressive part of the exhibition. Another part shows many of the developments which will bring ease and comfort to postwar living, such as plastics upholstery materials, household decorations, electrical connections and many other articles. At the preview meeting the color film entitled "The Plastic Age" was exhibited. The film is a production of Modern Plastics Magazine and tells the complete story of plastics from their chemical origin to modern uses.

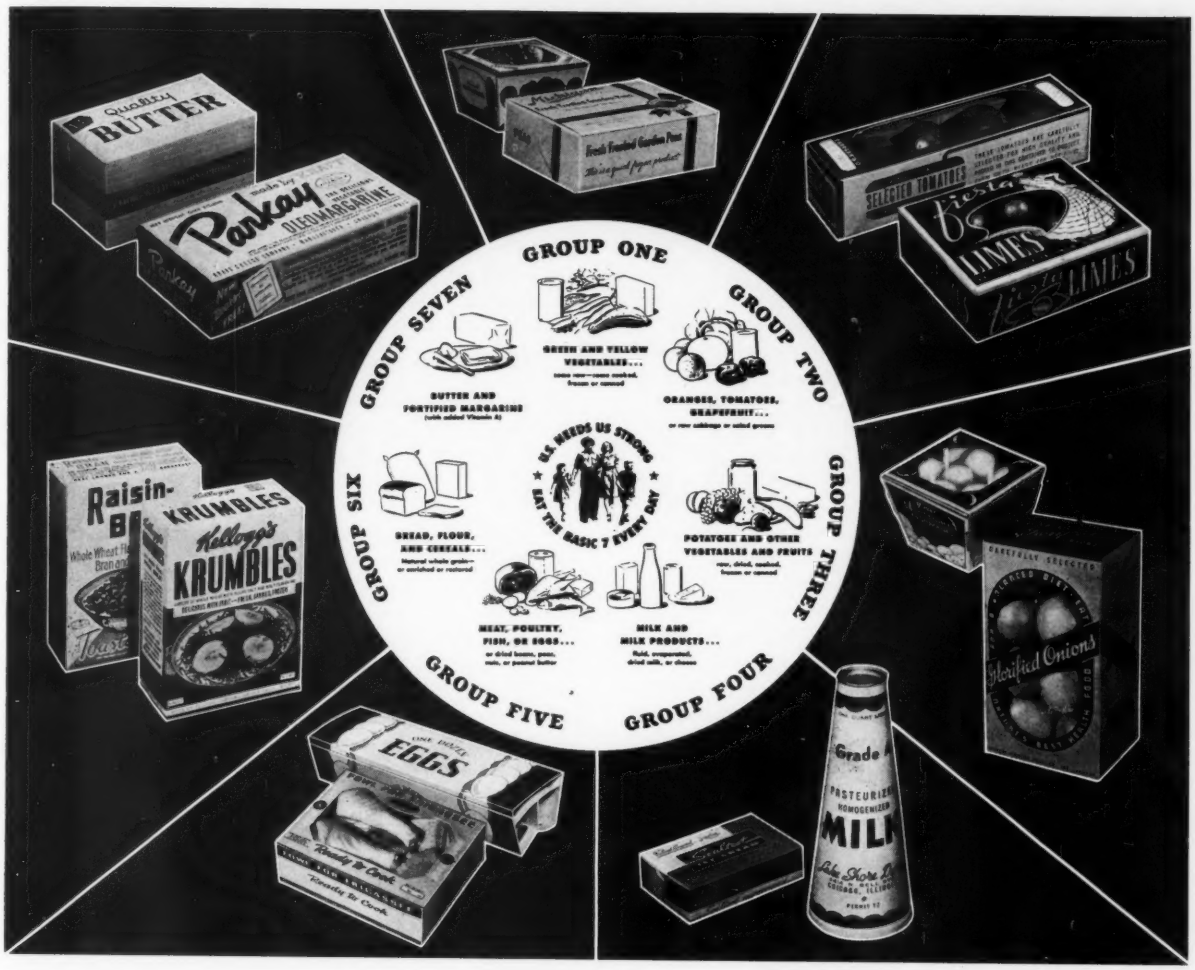
Company Museums by Laurence Vail Coleman. American Assn. of Museums. Washington, D. C. viii plus 174 pp., indexed, $2.50. The main purpose of the book is to show the nature and usefulness of company museums. However, it may also serve as a guide for people who have museums of this kind to manage. Company museums are museums belonging to industrial corporations, commercial houses, railroads, public utilities, newspapers, banks, insurance companies and other concerns. These museums are used for business reference and public relations.

Due to many requests for information on consumer goods in wartime, the WPB has started a monthly bulletin pertaining to the subject. This publication is planned primarily for retailers and the bulk of its distribution is to department stores for use in advertising offices and training departments. Requests for copies may be made to Division of Information, WPB, 1760 Social Security Bldg., Washington, D. C.

"Addition of 15 per cent of soya flour to the annual production of macaroni products would equal an equivalent of some 700,000,000 lbs. of lean meat per year," according to Donald S. Payne, Chief, Soya Products Section, Grain Products Branch, Food Distribution Administration, Washington, D. C., who spoke before the Macaroni Manufacturers Assn. recent national Chicago convention. "To encourage the use of soya flour an extensive consumer education campaign will be conducted by the government, just as soon as manufacturers make the soya products available to the consumer," Mr. Payne said. This will mean that packagers will take part in getting the products before consumers.

Correction

The heat-sealing machines illustrated on page 75 of the July issue are manufactured by the Automatic Scale Co., Inc., mention of which was omitted through an oversight. The accompanying caption should have included the statement that temperature, time and pressure are all subject to ready control.



PAPERBOARD PACKAGES PROTECT THE BASIC SEVEN

TO AN AMERICA long accustomed to the overflowing dinner table, food is no longer a matter of course!

The Basic Seven foods as set up by the National Nutrition program are now precious fuel for human fighting machines, both at home and abroad. On them depend the health, strength, and stamina to keep our war effort at victory pitch. Only if food processors do their part in planning the selection, preparation and conservation of these necessary foods will there be enough to maintain adequate nutrition.

And paperboard is doing its part!

Here at Sutherland, twenty-five years of food packaging experience are busy making paperboard packages, by the billions, to protect, conserve and enhance foods in every one of the Basic Seven varieties. Frozen food cartons . . . vegetable cartons . . . paper milk bottles . . . cottage cheese containers . . . ice cream packages . . . meat packages . . . egg cartons . . . cereal cartons . . . butter and margarine cartons . . . these paperboard products are indispensable weapons today in the battle of supply!

SUTHERLAND PAPER COMPANY

KALAMAZOO, MICHIGAN

Millboard drums

(*Continued from page 55*) it is easy for one of them to grab a container or the floating kapok ropes.

Recently Warrant Officer Roy Longard, a Canadian pilot, and four other members of his crew were saved in a 60-mile-an-hour gale. The Lindholme gear, which has been adopted only within a short time by the Royal Canadian Air Force, played a prominent part in the rescue. These men had drifted 31½ hours in the dinghy (in which one of the men had accidently cut a small gash) from the wrecked plane before being sighted by an airplane that dropped the Lindholme rescue gear from its bomb bay. The dinghy in the Lindholme gear inflated as soon as it struck the water. The airmen reached the second dinghy, much larger than that in which they had escaped from the sinking airplane. They hauled in the waterproof kegs attached to the dinghy and pulled out a first aid kit, cigarettes, tinned food and drink. Among them were tins of Canadian apple juice. The men were safe in the dinghy with their canned food until picked up several hours later by a Polish destroyer. The Bircham Barrel is another type of sea rescue gear which is an English development now being made in Canada. It is carried by the smaller patrol planes, since the Lindholme gear is too heavy and bulky to be carried by them. The barrel is also constructed of millboard painted yellow and it measures 11 in. in diameter and 28 in. in height. It has a steel frame inside the container to help withstand the shock of landing and it is built for being dropped from a bomb rack. At the top is an orange colored kapok line and wooden float, released by static line when the barrel is dropped from the aircraft. Inside the barrel is a canvas bag containing food rations, tins of water, first aid kit and a dozen marine distress signals. Its function is to tide over survivors until added supplies can be dropped or a rescue vessel pick up the the shipwrecked men.

Life jacket dye markers

(*Continued from page 70*) in place by two metal rivets. An opening, the width of the pack, is provided at the bottom to allow for the release of the dye container. This opening is sealed with a tab, extending beyond one edge of the envelope. The tab provides the quick release means, since all the user has to do is to pull the tab and the dye container drops out. Only one hand is needed to permit the discharge of the dye.

For the army, a somewhat different type of envelope has been adopted. The cotton fabric and coating are the same, but the envelope is not tied to the life jacket by a tape. It is cemented to a pocket flap on the left side of the life jacket. The envelope is formed of a folded length of fabric, the bottom part being cut off straight along the top edge and the top part forming an elongated U-shape tab. The dye container is attached with a 24-in. long, 1-in. tape to the inside of the envelope. Then the fabric envelope has an adhesive placed to a considerable depth along the sides and in a U-shape along the top edge. Then the edges are heat sealed. The reason for the particular U-shape spotting of the adhesive along the top edge is to make the release of he dye easier. The tab is pulled down from the top edge of the adhered surfaces, a smal ova'-shape part, thus avoiding the pull at the corners of the envelope. At first when the seal was made straight across the top edge, it was found that the pull at the corners made it rather difficult to release the dye. The rounded seal at he top has facilitated the opening of the packet.

The bottom edge of the envelope is stitched with cotton thread on a regular sewing machine. Then the edge is dipped in a sealing agent.

The tab on the army packet is large enough so that the user can get a good grip on it. He jerks the tab and the sealed edges come apart, releasing the dye container.

Calco Chemical Co. of Bound Brook, New Jersey, is the first company called in by the army and navy to make these life jacket dye markers and that company is largely responsible for the development of the packets. Now, not only Calco but several other companies are supplying the army and navy with packets, similar to the ones illustrating this article. However, all the packets use basically the same materials.

Cellulose acetate

(*Continued from page 85*) Everything considered, perhaps no single factor will influence the postwar production of cellulose acetate sheeting as much as the sales appeal of the transparent rigid container and window carton. With the return of an economy of peace and plenty the struggle for the customer's attention will be cataclysmic. Any aid to sales will be employed to its fullest possibilities and the transparent rigid container has sparkled many commodities from the red to the black side of the ledger.

The war has developed machines and methods that have reduced costs of these glamour packages. The self-service market had just established itself when war broke out. This development influenced packaging to a greater extent than many realized. The window carton particularly felt the impetus of this new merchandising method.

The future of cellulose acetate sheeting for packaging seems assured. Packaging, however, will have to share it with other fields expanded by war; notably, electronics where, acting as insulation, cellulose acetate is a dependable corrosion barrier. Its importance to packaging, however, will probably influence future developments.

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[6] B. Andersen, U. S. Pat. 2,280,055. W. H. Moss, U. S. Pats. 2,280,097; 2,280,098. H. Dreyfus, U. S. Pat. 2,280,482.
[7] P. W. Crane, U. S. Pat. 1,956,564.
[8] G. Schneider, U. S. Pat. 1,963,251.
[9] B. Andersen, U. S. Pat. 2,296,891. J. F. Walsh and A. F. Caprio, U. S. Pat. 1,950,954. G. Schneider, U. S. Pat. 2,274,851.

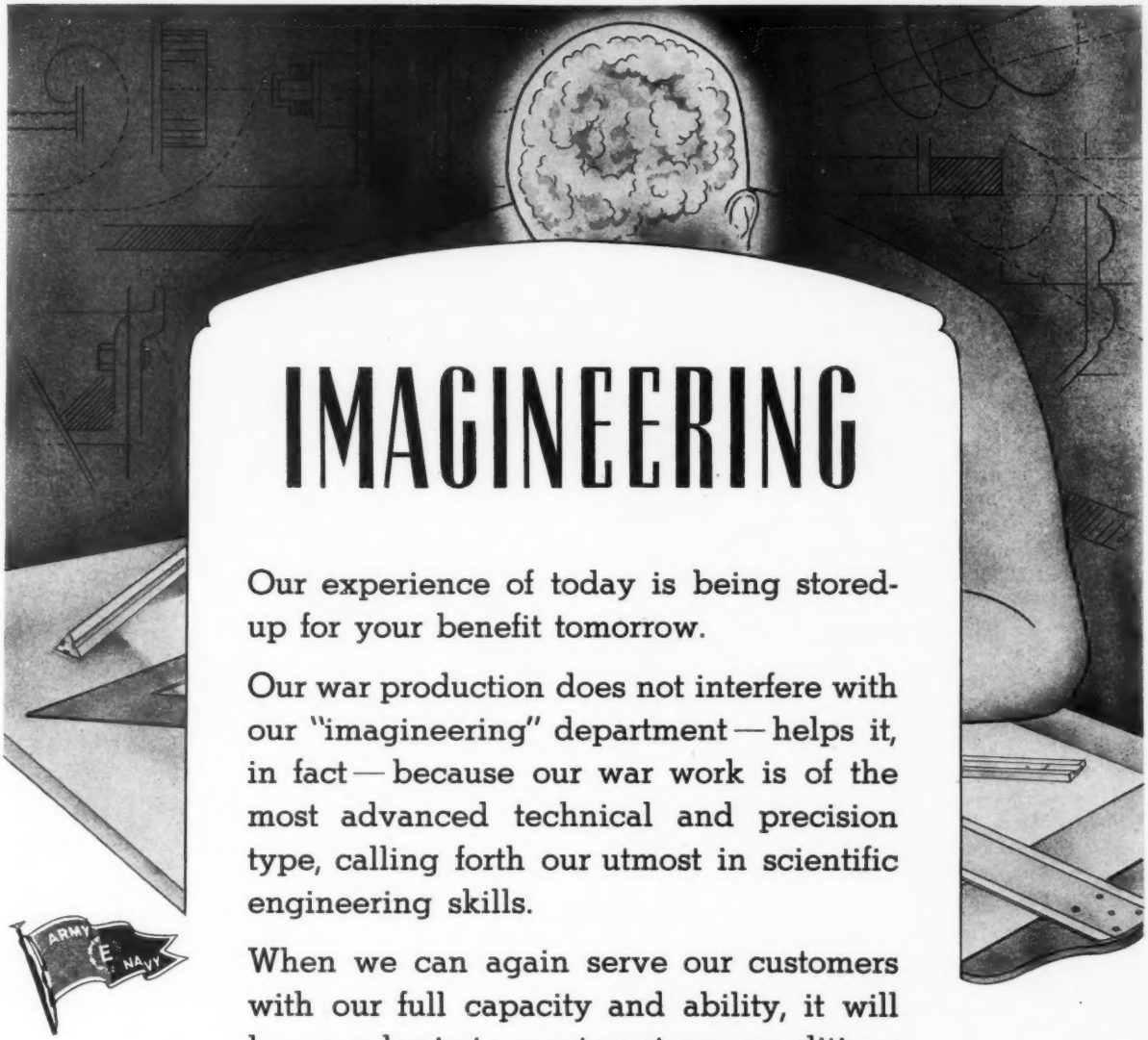
Seeds must sell themselves

(*Continued from page 68*) should be made which would result in wasted seed."

Another reason for continuing the usual packets is the limitation on materials for new display cases. Present equipment will probably have to serve for the duration and larger envelopes are difficult to place in present cases.

This year seed companies benefited greatly by the wide publicity that was given to Victory Gardens. Window trims, booklets and cultural folders planned for the Victory Garden movement were a great aid in the sale of seeds. Such promotion and interest will undoubtedly continue as long as the present food emergency lasts. It is further evidenced by the tremendous increase in the sale of vegetable seeds and the corresponding disinterest in flower seeds, usually a big seller on the display stands.

Credit: Seed packages by Stecher-Traung Lithograph Corp., Rochester, N. Y.



IMAGINEERING

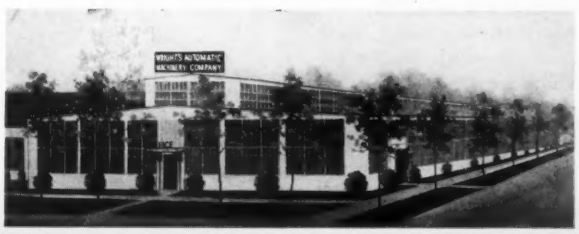
Our experience of today is being stored-up for your benefit tomorrow.

Our war production does not interfere with our "imagineering" department — helps it, in fact — because our war work is of the most advanced technical and precision type, calling forth our utmost in scientific engineering skills.

When we can again serve our customers with our full capacity and ability, it will be on a basis to meet post-war conditions with the latest, most modern up-to-the-minute equipment in our field.

And in the meantime remember—there are no priorities on SERVICE at Wright's.

ESTABLISHED • 1893 •



PACKAGING ENGINEERS

WRIGHT'S AUTOMATIC MACHINERY COMPANY

DURHAM CABLE ADDRESS YONWRIGHT NORTH CAROLINA, U. S. A.

Medical packs help

(*Continued from page 54*) and alcohol. The ampuls, as they are filled, are placed in this drum and she seals them with a blow-torch. As the drum revolves, carrying the sealed ampuls to the other side of the table, another worker picks them out and places them in a case. This moves along on a conveyor into a closed testing room.

In this room, the ampuls pass a section of the tester which is flooded with steam where the methyl bromide is heated to a temperature of 190 deg. F. If the glass is defective, the ampuls break, due to the increased pressure of the gas at this high temperature. On some days, the booming in this room would start a recently returned overseas veteran looking for a fox-hole. Next comes a cold water spray to relieve the pressure, so that there will be no explosions after the ampuls leave the room. Leakers are also eliminated by this testing process since they are partially empty when they come out.

Emerging from the testing room, still in the case on the conveyor, the ampuls reach a worker who puts them in white cloth bags. Next, the open end of the bag is stitched on a sewing machine and from there the ampuls travel down the center of a table on a conveyor belt to packers who take them off for cartoning.

The methyl bromide ampuling is done in a high-ceilinged room which provides more air per worker than is usual, yet a constant watch is kept for escaping gas. Every 15 minutes every connection on the pipes carrying the gas and the air around each worker is tested. Any trace of gas results in immediate evacuation of the workers in the area until the leak is repaired.

These war babies of the drug manufacturers have indeed been troublesome, but all who work with them feel amply repaid. The part they are playing in bringing our men back from the fighting fronts alive is well worth all the effort which goes into their development and manufacture.

Credit: Syrette: cartons, E. J. Trum, Inc., Brooklyn, N. Y.; collapsible tubes, Globe Collapsible Tube Corp., Brooklyn; transparent hood, Celluplastic Corp., Newark, N. J. and King Plastic Corp., Denver, Col. Methyl bromide: ampuls, Kimble Glass Co., Vineland, N. J.; cartons, E. J. Trum, Inc., Soda mint and quinine hydrochloride tablets: mailing tube, Cross Paper Products Corp., New York City. "Smother anesthesia": ampuls, Kimble Glass Co.; cartons, General Carton Co., Brooklyn, N. Y.

Reclaiming drums

(*Continued from page 61*) machinery to reconditioning and have become middlemen of a sort in order to stay in business. Many plants are so equipped that they can return the used drum almost to its original condition.

Some steps have been taken in the same direction with respect to fibre-and-steel and the all-fibre drums, but the actual success of renovation in these cases depends entirely upon both the previous contents and the use for which the drum is next intended. If the original contents are such that they do not affect the structure of the fibre drum and, if the fibre drum is given careful handling in both the plant and shipping, then there is a good possibility of its being re-used. The all-steel container will, obviously, stand more abuse than its cousin with the fibre walls, although the latter because of greater resiliency can take plenty of punishment.

Users and makers of fibre drums are making every effort to promote more careful handling of fibre drums intended for re-use. Rolling on the chime tends to break the fibre of the sidewell, sometimes causing the head or bottom to break away. Even though the ends may be the type which can, mechanically, be replaced or interchanged, the drum wall if damaged must be cut down to provide solid material for the new grip and this reduces the size of the container and introduces odd-size drums which complicate both the estimating of shipments and uniform loading of trucks and cars. Reconditioning of fibre drums is difficult, particularly if sticky products have originally been packed. If liners are used, then the drum may be re-used safely in many instances—particularly where an inexpensive container is more important than protection of the product, Some of the wholly non-steel drums have been used, and re-used repeatedly, it is claimed, in the shipping and factory-handling of explosives. This is due both to the durability of the container and to the fact that if used to carry explosives, they are spark-proof and, therefore, relatively safer than a container in which metal is used extensively.

The difference in manufacture of various types of drums is another factor that enters strikingly into this entire problem. Startlingly enough, more labor—both skill and man-hours—enters into the manufacture of a fibre-and-steel drum than in the production of an all-steel container of the same size. One man gave the following figures: Per production unit (manpower, machine and equipment) the ratio is 350 fibre-and-steel drums per 8-hour workday to 1,100 all-steel drums per production unit per 8-hour workday. These figures are based on production of the standard 28-gage, 55-gal. steel drum. He explained the situation as stemming from the relative facility with which machine-production can be used for the manufacture of the steel drum. Even during wartime machine production of steel containers is still possible, using the pre-war existing machinery, while the part-metal drum is still held, in a large measure, to hand operation because of the inability of manufacturers to get machines, conveyor equipment and other labor-saving devices necessary to establish fibre-and-steel production upon a mechanized basis. This and the tightness of the paper supply also contribute to the difficulty of obtaining sufficient quantities of fibre-type containers to supply the demand.

More emphasis

(*Continued from page 78*) the display the appearance of being full.

From time to time Bellman changes the types of displays, since it is felt that by changing a display at intervals, it stimulates additional buying. The one permanent display that is always to be found in the Bellman store is a Household Conservation Department.

Mr. Holt reports that products in glass have distinct advantages in this type of merchandising. Most of the articles which are classed as conservation aids now come packaged in glass. Sometimes lights are placed so they will shine through the filled bottles. This added sparkle, Bellman finds, is a definite eye-catcher. Economists point out that wartime conditions are teaching American householders many valuable lessons in economy and effort saving which will leave their marks for a long time to come. Thus the grocer who takes advantage of the patriotic theme in pushing the sale of conservation aids now will be laying the foundation for continued good volume in these lines.

Credit: Display arrangements for Bellman stores suggested by Owens-Illinois Glass Co., Toledo, based on their booklet "Retrieving Dollars with Household Products."

AN AMERICAN INSTITUTION WORKING WITH AND FOR AMERICA

UNCLE SAM—WORLD'S LARGEST GROCER

America operates the largest food business the world has ever seen. Upon the packing houses, mills, canneries and other food processing plants in this country, the Allies are depending for the "weapons" that will win the war. To feed the fighters, war workers and civilians in many far-flung countries is a tremendous responsibility. First, to produce food is all-important—second, to conserve and protect it is vital. Waste, shrinkage and spoilage are *enemies.* Because precious Foods-for-Freedom require invulnerable protection in transit and storage, we know that today Rhinelander protective papers play a vital part in our Country's war effort, and tomorrow will serve equally well the peacetime needs of the Nation.

RHINELANDER
PROTECTIVE PACKAGING
Papers

FROM THE BEST THAT'S MADE TO THE CHEAPEST THAT'S GOOD

Genuine Greaseproof
Coffee Bag Papers
Confectionery Papers

Cereal Wrapping Papers
Laminated Greaseproof Papers
Lard and Shortening Liners

Bakery Product Wraps
Cracker Box Liners
Greaseproof Innerwraps

Wax Laminated Glassine
Opaque Label & Bag Glassine
Packing Industry Wrappings

RHINELANDER PAPER COMPANY • MILLS AT RHINELANDER, WISCONSIN, U.S.A.

V-Box stylists say "no sleeves"

(*Continued from page 45*) Four sizes of cases were tested. The average for each of these sizes in each of the grades of board follow:

No. of Groups	Size	Grade	Caliper	Dry Mullen	Wet Mullen	Drops: Sleeves	Drops: Straps
1	Evap. Milk	V-1's	.117	945	582	19	20
1	Evap. Milk	V-2's	.107	677	642	19	20
2	24—2's	V-1's	.111	880	591	17	16
7	24—2's	V-2's	.106	676	538	14	16
3	24—2½'s	V-1's	.112	851	702	19	17
4	24—2½'s	V-2's	.107	618	508	12	11
14	6—10's	V-1's	.110	850	625	15	20
9	6—10's	V-2's	.105	685	563	16	23

No one has yet accepted the Group's recommendation. The Container Coordinating Committee had decided that other tests should be made. They are: 1. A drum test for abuse. 2. Comparison of flat straps with round wire. The WFBG tests were made with flat straps only. The government wants to try out round wire as well. 3. Exposure of boxes in the open to ascertain whether or not they will pick up more moisture. The WFBG recommendations were made for canned foodstuffs only. As these items generally go in metal there is no question of moisture penetration into the food itself, but in a sleeveless box there is danger of water getting into the box between the flaps and cause rust damage. The sleeve is supposed to prevent that type of penetration. The government Coordinating Committee has pointed out time after time that there is no test like experience in handling wartime shipments. All Service groups insist that the only real satisfactory test is "how did it stand up in actual delivery of the goods under adverse circumstances?" Spokesmen of the armed forces insist that there is no preliminary test that can tell what will happen to a package when it is subjected to all the hazards of landing in a battle zone. Therefore, the Coordinating Committee is gun-shy of any substitute for the present sleeve-enclosed V-box until certain it will do as good a job as the present box is believed to be doing.

The recommendation that sleeves be eliminated from the V-box naturally results in the question: "Then, why was it ever included?" The answer goes about like this:

After Pearl Harbor, material was shipped overseas as quickly as possible. The only containers available were those already in common usage—domestic containers—of corrugated instruction. They served at home, but they were never built for warfare and exposure to salt water, humidity of the Tropics, nor sub-zero of the Arctics.

Army officers came home and complained bitterly about shiploads of material lost because it was ruined before it could be used. Flour mildewed; metal parts rusted; batteries got water soaked. They insisted that hereafter everything must go in wooden boxes, properly lined when necessary. But there wasn't enough seasoned wood to meet the new demand for boxes. Green wood became a replacement with a few dubious results. Sometimes the wood warped and the nails came out. Generally speaking, wooden boxes, properly lined, would have been satisfactory if lumber had been available in sufficient quantities. It was not. So, the fibre box industry in conjunction with WPB, Army, Navy, Agriculture, Treasury Procurement, and all other war procurement agencies set out to build, develop, invent or design a fibre box which would have the carrying qualities of a wood box. Wood boxes are desirable for rigidity which gives excellent protection to their contents, often breaking apart themselves before allowing much damage to the contents. Fibre boxes are desirable for their ability to take prolonged abuse, but, because of their inherent (and often advantageous) lack of rigidity, blows on the box are often transmitted to the contents It is not uncommon to find that the new special box will outlast its contents when under severe punishment. The sleeve was added to "go the limit" in strength regardless of expense.

The V-boxes represented the results of experimentation to overcome the above conditions when used with a sleeve were thought to be the closest approach to nailed wood boxes with the additional advantage of sure and contained closure as well as greater resistance to abrasion along score lines of box.

In a typical V-box the two surface plies are kraft or high test jute and the fillers are made of high test material. Usually there are two fillers making this 4-ply board. The plies are highly sized and the adhesive is a mixture of starch and urea formaldehyde. When properly made, no separation of plies takes place after 24-hr. immersion. Occasionally asphalt is used as the 2 outer adhesives and paper reinforced with vegetable fibres buried in asphalt, on the VR boxes.

V-1 boxes are now being produced of either kraft or jute—with excellent Mullen test requirements. V-2 and V-3 are the same except somewhat cheaper raw material can be used for the purpose.

Three degrees of V-board were developed for various purposes: V-1 for use in shipping to actual combat zones where treatment would supposedly be rougher than anywhere else, V-2 for shipment behind the lines, and V-3 for shipments to such as lend-lease to comparatively quiet sectors. About the only difference among them is in strength, quantity and quality of material used.

The Marines were developing another box under the guidance of Colonel Glockner even before the war started. They call it VIM Superboard. It is very similar to V-Board except that it is 120 point thickness against the Army's 100 point and is less than 50 per cent kraft. In typical Marine fashion they proved its seaworthiness by attaching 12 boxes to a patrol boat and hauled them five miles up and down the Delaware River, including a run through driftwood. All boxes came through the tests satisfactorily except one which had been broken by the driftwood. Similar to the other services, the Marines also tested the boxes by subjecting them to rain and snow for a month and soaking them in salt water for various periods of time.

Some persons consider the new solid fibreboard box superior to wood. A meat packer recently stated that his company would never go back to wood again. Under tests the V-boxes will stand more drops than wood; they are thinner and take up less space; are lighter in weight, thus easier to handle; shed water better than wood; can be loaded more easily; and the material from which they are made is readily available under normal circumstances.

On the other hand, they are not so rigid as wood and can't be stacked so easily unless the contents are rigid.

The sleeve was considered a necessary part of this box in order to strengthen it and seal it when there was a lack of metal for strapping. Metal, of course, is still critical, but in view of the container board tightness, it is possible that this small amount of steel could be obtained to relieve the hard-pressed container industry.

BRINGING OUT THE *Brighter* SIDE

IT'S easy to look upon the bright side of things, with a jar of Skidoo around to help you do it.

This creamy household cleanser, made by The Skidoo Company, Columbus, Ohio, is now packed in good-looking glass containers . . . dependably sealed with Crown Screw Caps.

Manufacturers all over America who have converted to glass in order to conserve more critical packaging materials, have found Crown ready with closures in a wide variety of types and sizes to meet their particular wartime requirements.

CROWN CORK AND SEAL COMPANY

World's Largest Makers of Closures for Glass Containers

BALTIMORE, MARYLAND

CROWN CLOSURES

ROWN'S WARTIME POLICY: *To supply closures, containers and services for packaging foods, beverages, chemicals, etc., ded by civilians and the armed forces. To build an ever-increasing volume of vitally needed weapons of war for our fighting men.*

Summer pies in winter

(*Continued from page 59*) received flat from the manufacturer. Sides are stitched with eight, dipped-wire staples and these particular wire stitches are guaranteed against rusting, a condition which might easily arise during the long storage wait under the sub-freezing conditions.

Binder cloth of so-called walnut last is used to tape bottoms and tops of the corrugated cartons. These cartons, 19 in. by 11 in. by 7 in. have come through successfully in bursting tests of 200 lbs. per sq. inch. When the cellophane inner bag is folded down into the corrugated carton, a $10^1/_2$-in. by $6^7/_8$-in. corrugated collar is placed down over the top of the cellophane container. Then tops and sides of outer corrugated carton are folded down over inner collar and taped.

Formerly, enamel-lined, tin containers were used. Mr. O'Donnell, stated that the combination cellophane and corrugated containers serve very satisfactorily.

One headache not now encountered with the change from metal to paper in the packaging of this product is the problem of separation of the tin containers in the receiving rooms. Oftentimes the empty tins were telescoped one within the other to save space. These piled-high heaps of empty containers were sometimes stacked 10 or 12 feet high. So tightly did some of them telescope, however, that separating them was a time-consuming and laborious job. This nuisance is eliminated with the corrugated cartons which are received flat and consequently take up little space.

Pound production of the rhubarb-pie pack is high and demand is increasing. Last year, the first season which saw successful processing, more than 75,000 lbs. of rhubarb was packed. This season, 500,000 lbs. are being processed.

Credits: Printed rhubarb carton, Container Corp. of America, Chicago. Cellophane bags, The Dobeckmun Co., Cleveland.

Patterns for package

(*Continued from page 50*) Label design is naturally the primary problem in their packaging program. All of their labels feature the firm name and the product name, but no attempt is made slavishly to follow a family-design principle. Their packages resemble each other in some respects but, for the most part, the designs show a considerable variety. Compliance with government requirements is insured by careful conference between the research laboratory and the advertising department, the latter being primarily responsible for the creation of new designs.

A confectionery manufacturer

This company manufacturers a wide line of sweets, some under special brand or product names but all featuring the manufacturer's name. They have an extensive sales organization operating in zones from coast to coast. This organization, strictly under their own control, sells direct to retailers without any intermediaries. Depending on the territory, these salesmen call on their trade as often as once a week in the class "A" type of stores and at longer intervals for other types the longest being six-weeks in small towns.

Their package procedure is much the same whether launching a new product or revising the package for an established product. The call for the new product or package is usually based on information originating from their sales organization. The matter is first discussed by the executive board which consists of the president, vice-president, plant manager, sales manager and sales promotional man. Unless the circumstances are very unusual, the advertising element is not represented until later conferences. This executive group determines three cardinal points:

1. What the potential market will be for the new product,
2. What the price range will be,
3. The name for the item or product.

The next step is to decide what the design should look like. When the executive board discusses this point, one of the principal considerations is the seasonal element, which is a matter of vital importance in marketing confectionery, with its emphasis on such days as St. Valentine's Day, Easter, Mother's Day, Graduation, summer consumer habits, etc.

The problem now goes to a staff artist, not a member of the organization, but a well-known commercial designer who is on a retainer basis. Like the advertising agency, this artist does not participate in the early discussions, but on the basis of the information and conclusions presented to him by the executive group, he prepares several rough visuals.

These suggested designs are studied by the executive group from the following standpoints:

1. Structural considerations,
2. External appearance and sales appeal,
3. Price range of product as related to package cost,
4. Requirements of the contents, e.g., hard candy vs. soft creams,
5. Protective qualities of the package,
6. Shipping qualities,
7. Competitive considerations.

Points 5 and 6 are paramount with this company. The package, therefore, must be placed in the ultimate consumer's hands in absolutely flawless condition. Consequently, before any package is finally adopted, actual shipping tests are made to determine the structural adequacy. In the matter of competition, the executive group makes careful investigations that are very direct and specific.

Currently with the shipping tests and the preparation of models and dummy packages, cost problems are carefully studied. At the same time, market studies are conducted by their own sales organization who call on dealers to obtain their ideas on probable consumer reactions. These advanced studies are the basis of sales estimates.

In anticipating packaging needs the sales estimate is cut to 25 per cent of the original figure. Because of their nation-wide distribution, this quantity is still of a size that can be purchased economically, so price estimates are obtained from package suppliers. According to their policy, the supplier makes his own finished art from the artist's sketches. This finished art must be submitted for the company's approval before he proceeds with the making of the plates. Similarly, the supplier is charged with the full responsibility of making plates, embossing dies, etc. Before proceeding with the printing of the job, however, he must again submit press proofs and progressives for approval.

The seasonal element being what it is in the confectionery line, packaging needs are anticipated far in advance. In some instances, the materials may be held in storage for some time before the package is actually launched.

After the product is launched, the company makes it a practice to use their own sales organization for the purpose of obtaining complete reports, dealer comments and consumer reactions as reported by dealers.

In a forthcoming issue will appear the second in a series of two articles on Patterns for Package Planning, *with conclusions drawn from the complete study.*

WE WISH YOU MIGHT HAVE SEEN IT . . .

FRANK D. PALMER, INC.
DESIGNERS AND BUILDERS OF SPECIAL MACHINERY
528-34 NO. WESTERN AVENUE
CHICAGO
TELEPHONE CHESAPEAKE 3344

A machine designed and built by Palmer engineers for packaging a special product has just been installed on its war job. Thirteen employes were released for other work, and a difficult packaging problem was solved.

We wish you might have seen it—but that's impossible, for it is a guarded secret of our customer's.

Palmer packages and equipment are usually designed for special purposes—without the limitations of machines made for a thousand uses and "adapted" or "converted" to specific jobs. A number of the country's most widely distributed products are packed in packages developed in the Palmer laboratory; formed, filled, and sealed on equipment designed and built by Palmer engineers for the exclusive use of our customers. Some of our equipment has been licensed by our customers to others—much of it, however, is guarded against competitive use.

Consideration of an exclusive after-the-war packaging program may appeal to you now.

PALMER
CHICAGO

FRANK D. PALMER, INC.
528-34 North Western Ave. • Chicago, Ill. • Chesapeake 3344
PACKAGE DEVELOPMENT LABORATORY ★ SPECIAL MACHINERY MANUFACTURERS

Permanent holder

(Continued from page 75) what was wanted. Realizing more than three years ago that something had to be done in the matter of its point-of-purchase advertising the firm began to look around for possible display material. Two basic types of display signs are normally open to an advertiser—the changeable lithograph card and the permanent sign, both having their good points as well as certain disadvantages. The well-made permanent display sign, of course, can get good location and stays up for a long time. However, this has a disadvantage, because, sooner or later, the sign is regarded as part of the fixtures and loses its effectiveness as an advertising medium. The lithographed card, Mr. Luckey realized, with all its bright colors and seasonable change advantages, never became static. On the other hand, the piece quite frequently got dirty and would be discarded, or the good location on top of the juke box or cigarette machine was lost the first time the machine was serviced by its own organization.

"We finally decided," said Mr. Luckey, "that the ideal beer display program would deliver advertising value if we could get our litho display cards on display for the length of time that we knew a permanent sign would give us. Our master sign holder has given us just that double advantage.

"We, of course, thought of using an ordinary frame, but the rectangular outline of any frame soon becomes static. In addition, a frame also limits the use of any die-cutting or third-dimensional technique in the preparation of the card itself. We wanted to make a holder that would retain its location, take a variety of sizes and shapes and still would not of itself detract from the attention-value of the litho card currently placed in it."

Construction of holder

The Altes patented holder is so designed that the inside slots into which cards fit will take even a single sheet 17 in. by 22 in.—normally the smallest size lithograph job. Yet even this, to conform to the current paper-saving edicts of the WPB, can be made up with a die-cut effect so as to be attractive and attention-arresting. As intended, the die-cutting gives a slight bulge to the card, holding it securely in position. Every change of the card gives an entirely fresh appearance to the sign. The back of the holder, incidentally, is discouragingly plain. It is merely the undecorated plywood board. Consequently, there is no tendency to leave the holder as an advertisement. The only legend on the holder itself is a single line across the bottom, beneath the shelf-effect, which states, "You're Welcome Here. Drink Altes Beer." The holder is made of high-grade plywood, with a natural wood finish, to blend with any decorative scheme, and a thin beading of chrome around the shelf, giving it a glass-like appearance.

The display is designed so that the cardboard sign does not touch the wall. This, says Mr. Luckey, is an advantage in that it avoids a dust-mark outline when the card is removed and a new one inserted. "Our best results," he reported, "are obtained when the holders are nailed firmly in position. This prevents the dealer or a customer removing the holder without a great deal of trouble. The fact that they are nailed and not screwed into the wall is a very important detail. Tests of all the markets in which we have used it, prove that these holders will stay up and hold the best locations for us. We have had very little, if any, trouble with competitors putting their signs in our holders. The fact that the holder and frame stick out from the wall makes it particularly difficult for competitors to hang or set their advertising in front of our display cards.

"One thing we have learned," he continued, "is that the cards must be changed regularly and on a schedule or the entire purpose of the master sign plan is defeated. Without changes, the cards and holders will stay up, but they lost their attention value in direct ratio to the time that the old card is still on display."

Distribution system

The Altes Company's system of distribution of holders and changing of signs is unique and effective. Original distribution of the holders has become a part of the job of each salesman. Generally on his distribution campaign, the salesman will ride the wagon with the driver and, while the latter is about his business of servicing the bar, the salesman will select a likely looking spot for the holder. He approaches the proprietor or manager and shows his holder and the sign designed for it. The nails have already been driven partially through the sign, to save time and fuss. Then, holding the sign in position at the selected spot he asks, "How does it look here?" If he meets with no violent objection, he simply drives the nails home and the holder is in place.

"Most people are nice and we don't have much trouble about spotting the signs," Mr. Luckey said. "Selection of a spot is mostly a matter of good commonsense. About a foot above eye-level has been found to be about right, with good lighting being a primary consideration."

Preferred spots for Altes Lager displays are on a back wall, near the icebox, in a grocery store; near the clock, the rest rooms on the front or center of the back-bar in a restaurant or bar. Since the location has the approval—at least the tacit acceptance—of the owner or manager, there is seldom any trouble about future placing of the cards.

New cards are distributed by the salesmen in about the same way as the first placement. If necessary, the driver can renew the cards. This method will be used until after the war, when a special crew of advertising men can be recruited for the purpose. Every card is stamped on the back with the company's name and serial number that identifies the card, the date, and the means of distribution This coding serves to check up on lost, stolen or dumped bundles of cards. As cards are changed, the salesman fills out a special section of his sales report slip which reveals many important bits of information to the company The report shows whether the previous card was in place, if a new one was inserted, the customer's reaction, if any special service was rendered and other details to guide the firm and salesman in future relations with the retailer. These reports are actually checked by the advertising department and are routed through the bookkeeping department where they are entered in a special ledger so that the sign-maintenance service can be checked.

Pilferage of the sign holders is low, but a great many women who see the signs in groceries and cafes frequently pester the proprietor to "get one for me—I want it for a spice shelf," Mr. Luckey reports. The holder and the master sign system are adaptable to any sort of campaign or business where frequent card changes are important and where low-cost, quick servicing and rapid turnover are vital. Any of the sales or service men calling on the stops can take care of the changes, where a regular advertising service is not available under war conditions or is not feasible. The patent, obtained by Mr. Luckey, has been assigned to the Altes Brewing Co. which has announced its willingness to make the system available to non-competitive organizations.

We Have A Double Wartime Job!

The Mac Sim Bar Company is making every effort to turn out huge quantities of boxboard, vitally needed in our war plans. That is our first wartime job.

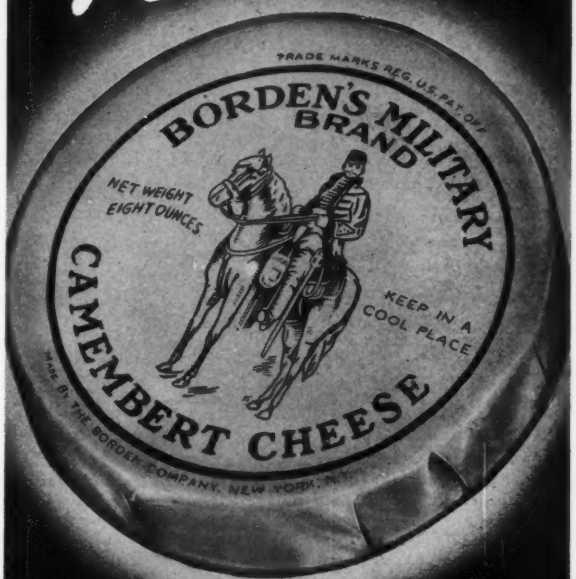
Supplying our regular customers with the high quality boxboard that we have produced for 37 years is our second wartime job.

MAC SIM BAR
Paper Company

OTSEGO, MICHIGAN PHONE KALAMAZOO 5500

CHICAGO, 228 N. LaSALLE PHONE CENTRAL 1798

New


TRADE MARKS REG. U.S. PAT. OFF.
BORDEN'S MILITARY BRAND
NET WEIGHT EIGHT OUNCES
KEEP IN A COOL PLACE
CAMEMBERT CHEESE
MADE BY THE BORDEN COMPANY, NEW YORK, N.Y.

CELUMINA

Cheese Wrappers

FOIL-LIKE BRILLIANCE with CELLOPHANE PROTECTION

A beautiful wrapper . . . with the bright sheen of polished silver . . . and a strong protective coating . . . tasteless . . . odorless . . . tear-resistant . . . that's Celumina, a replacement for war-scarce foil. Celumina has many advantages. It handles easily, wraps fast, and withstands scuffing. It unwraps in one piece and can be re-wrapped. Attractively printed in one or more colors. For camembert, blue, process and other cheeses. Ask for samples.

GENERAL FELT PRODUCTS, INC.
68 THIRTY-FIFTH STREET BROOKLYN, N. Y.

TO WAR PRODUCT MANUFACTURERS WHO WANT FASTER LOWER-COST CARTON STITCHING

In hundreds of war plants, these new, low-cost Acme Silverstitchers are smashing box stitching records. Box stitching is easier, faster for women and men operators alike.

PRODUCTION DOUBLED! Many users have had their output of stitched cartons doubled. And they've a better and neater job—a much stronger carton.

SAVINGS OF 50%! In time and material these long-lasting stitching machines are making savings of as much as 50%. And sealing by stitching is often five times as fast as other sealing methods. Actual tests show holding power to be twice as strong on the average.

STANDARD AND SPECIAL TYPES. There is an Acme Silverstitcher to meet every box stitching requirement — Straight Arm, Bottom, Top, Seam, Combination Straight Arm and Bottom, Combination Top and Bottom—as well as special types. Sturdily built for long, trouble-free service. Few moving parts mean low maintenance costs. Mechanism is guarded for maximum safety. Cost is amazingly low.

AND USE ACME SILVERSTITCH for trouble-free stitching. It's true to size and temper . . . rust-resisting . . . non-tangling . . . providing stitches that clinch tightly and stay tight for the life of the package. Made in six standard sizes . . . in five and ten-pound, one-piece coils.

BE SURE TO MAIL COUPON FOR FACTS

A new folder tells you how you can get faster, better stitching. It has all the data on the new Acme Silverstitchers — complete with interesting photographs . . . showing them in use, helping other manufacturers meet war requirements. It's yours for the asking. Simply mail the coupon below.

ACME STEEL COMPANY

2843 ARCHER AVENUE CHICAGO, ILLINOIS
Branches and Sales Offices in Principal Cities

Acme Steel Company, 2843 Archer Ave., Chicago, Ill.
( ) I'm interested in faster and easier box stitching at lower cost. Please send me the FREE folder with all the facts.

Name.....

Address.....

City.....

State.....

S&S MACHINES help fill war contracts Faster!

Speeds to suit your Needs . . . 15-30-60-120 per minute!

S & S collaboration with leading packers has solved some of the toughest packaging problems of this war . . . has been a shortcut to speedy economical packaging in packages that really protect!

If you have a problem in wartime packaging—*call in S & S!* Ask us about converting your present machines to wartime needs . . . or, if your product is a high rated war essential, ask about the new S&S machine for its rapid, low-cost packaging. Use this service freely; there's no obligation!

STOKES & SMITH Co

FILLING—
PACKAGING—
WRAPPING
MACHINES

4911 Summerdale Avenue • Philadelphia, Penna.

Good News!

For Those NEW GLASS PACKAGES!

★ CAPEM Screw Capping Machines automatically take containers from a conveyor belt, cap them perfectly, and return them to the belt without intermediate handling.

★ Deliver a LEAKPROOF Seal.

★ Use any type of metal or plastic screw cap—and certain acceptable substitutes.

★ Handle jars, bottles or jugs of any size or shape.

★ Seal from 2000 to 7500 containers per hour.

★ Save from 2 to 5 operators per machine.

★ Available on satisfactory preference ratings.

CONSOLIDATED
PACKAGING MACHINERY CORP.
1400 WEST AVE. · BUFFALO, N. Y.

Make Your Identity Stick

Bottles and cans without labels are very bewildering, whether at home or abroad. Not only are *brands* lost but also the name and nature of the contents. We have labelling glues that will *stick* regardless of conditions.

Write or telephone our nearest branch factory and one of our technicians will make recommendations.

BINGHAM BROTHERS COMPANY
FOUNDED 1849
Every Kind of Roller and Adhesive

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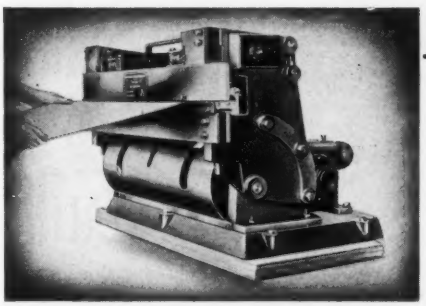
JAW-TYPE HEAT SEALERS HANDLE BAGS TO 30″ WIDE



AUTOMATIC Scale Heat Sealing Machines offer more flexibility. Hand operated, or setup to operate on automatic production lines, these machines handle bags up to 30″ wide.

Thermostatic heat control gives temperature flexibility to handle all heat-sealing materials from 125° to 500° F. and higher. This machine gives control of pressure, temperature, and time. It may be operated in a vertical position as shown or turned at a 90 degree angle.

Write for details, prices.

AUTOMATIC SCALE COMPANY
INCORPORATED
591 HUDSON STREET
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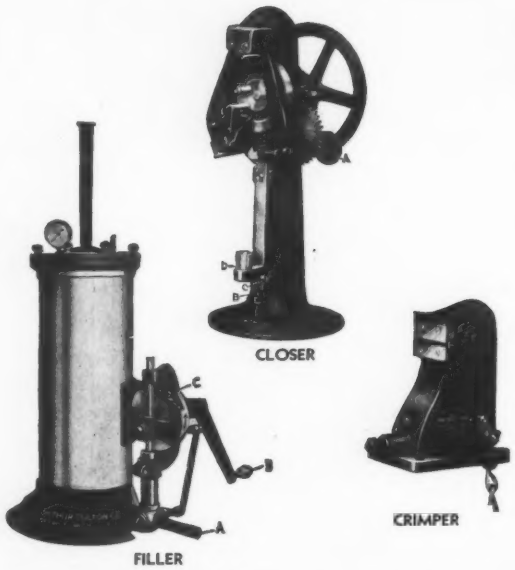
Colton HAND OPERATED MACHINES



Will seal tubes with Colton Clipless Closure or for applying clips

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Will be pleased to recommend machines suited for your requirements—write

ARTHUR COLTON CO.

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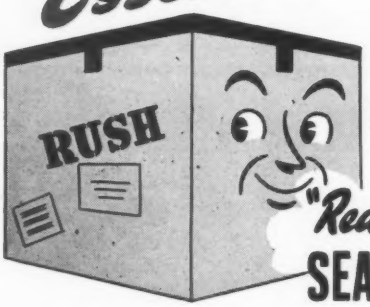
Essential for MODERN SHIPPING



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Just good paper and plenty of glue make Red Streak Sealing Tapes a certain insurance against shipping losses. Have you tried it?

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for this HIGH-SPEED WRAPPER

Perfect registration by means of a photo-electric cell is only one of the unique features of the HAYSSEN high-speed wrapping machine. Others are: 1) Low capital investment; 2) Handles cellophane or wax paper; 3) Variable speed adjustments; 4) Simple design, standardized parts; 5) Completely automatic; 6) Low upkeep; 7) Fully adjustable; 8) Every package perfectly wrapped.

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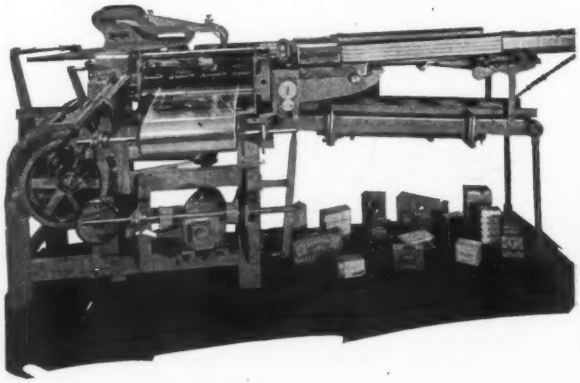
HAYSSEN MFG. CO SHEBOYGAN, WISCONSIN

Builders of Wrapping Machines for More than 25 Years



YES SIR!

Bemis WATERPROOF Bags deliver full weight

You can say "goodbye" to weight loss and shrinkage in storage or transit, if you pack in Bemis Waterproof Bags. For these sturdy laminated bags are constructed to prevent losses either by evaporation or sifting. And they are made *extra strong* to stand the strain of shipping in these days when trucks and cars are loaded to capacity.

Tough, closely woven fabric forms the outside of Bemis Waterproof Bags. This fabric is *bonded,* by special adhesives, to layers of paper in any combination *your* individual problem requires.

For example, Bemis Waterproof Bags can be made that keep moisture in and dampness out . . . retain desirable aromas and repel objectionable odors . . . keep out dust and dirt . . . resist greases and acids.

Our engineering department will work with you in developing bags tailor-made to your needs. Details and samples sent promptly on request.

WATERPROOF DEPARTMENT

BEMIS BRO. BAG CO.

St. Louis • Brooklyn

BETTER BAGS FOR 85 YEARS

WOODEN BARRELS NOW MADE TO DO THE JOB OF METAL

by Using

3-M ADHESIVES

and 3-M COATING COMPOUNDS

This is just one of a number of today's problems solved by 3-M Adhesive engineers.

There are more than 100 adhesive coating and impregnating fluids, sealants and sprayon insulators in the 3-M Adhesive Line made from reclaimed rubber, synthetic rubber, synthetic resins and non-rubber materials.

Have you a problem that the use of these products might solve? A word from you and one of our experienced Adhesive engineers will gladly review your problem—without obligation, of course.

Why not send that inquiry today!

MINNESOTA MINING & MFG. CO.

Saint Paul, Minnesota

Adhesive Division—Detroit, Michigan

Gentlemen: MP 843

Kindly have one of your 3-M Adhesive Engineers call and review our production problem.

Name.....

Department.....

Company.....

Address.....

City..... Zone..... State.....

★ ★ ★ ★ ★

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ABRASIVE PAPER and CLOTH PRODUCTS
"SCOTCH" TAPES
ADHESIVES
WAX and SEALER
LAPPING and GRINDING COMPOUNDS
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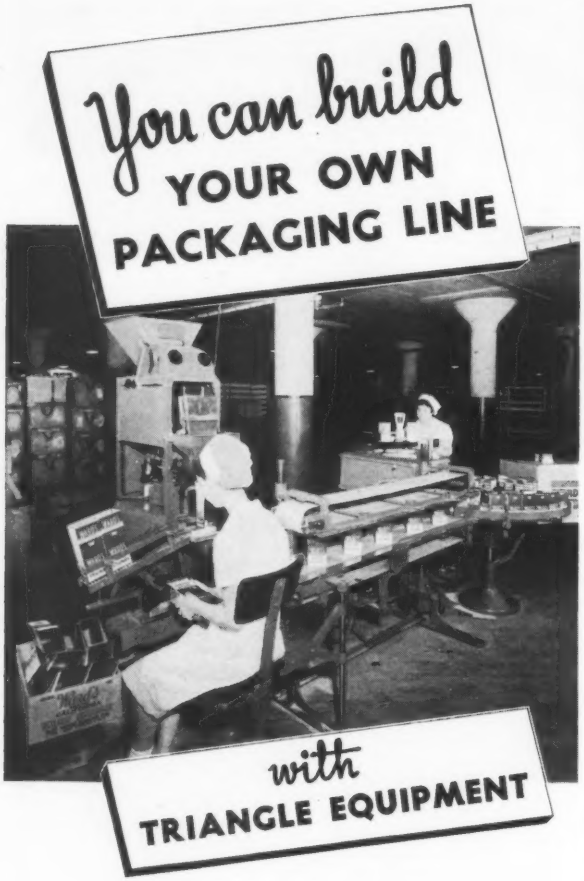

THE compact, economical packaging line illustrated, virtually tailor made to the user's requirements, is typical of the many possible combinations of Triangle equipment. The Triangle Carton Gluer, Elec-Tri-Pak Weigher, Carton Sealer and Collector Table shown are all individual standard units.

For your needs, Triangle engineers will help you choose from many models of Elec-Tri-Pak Weighers, the world's most complete line of Volumetric Fillers, a complete range of Carton Sealers and all types of accessory equipment to provide you the finest possible packaging installation.

For high speed, completely automatic installations, Triangle offers you "Elec-Tri-Line" packaging, the system second to none.

Discuss your packaging requirements with Triangle — write today and ask for literature.

ARMY E NAVY

TRIANGLE PACKAGE MACHINERY CO.

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yes...

there will be a *Change!*

Paper products designed for war emergencies will undoubtedly be generally adopted for post-war use.

Our research department is cognizant of this fact and we will have new paper converting equipment to meet these problems.

Just now we are working with thousands of other industries on war materials needed to beat the Axis.

Give us your machinery problems and ideas now for post-war construction and delivery.

HUDSON-SHARP

MACHINE CO • GREEN BAY • WIS

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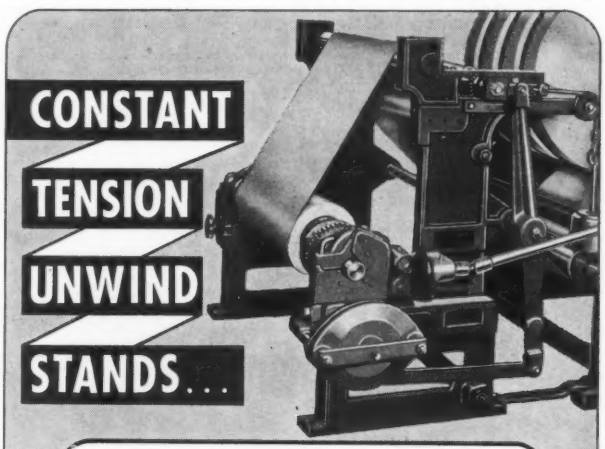


CAMACHINE Constant Tension Unwind Stands are used on the unwind end of slitters, winders, web printing presses and other roll processing machines. With this equipment the tension on the web remains constant from start to the finish of the run without the attention of the operator. This assures rewound rolls of uniform density from the core out. On multi-color web printing presses it aids in maintaining accurate lengthwise register. Write for folder.

CAMERON MACHINE CO., 61 Poplar St., Brooklyn, N. Y.

Midwest Sales Office, 111 W. Monroe St., Chicago, Ill.

CAMACHINE

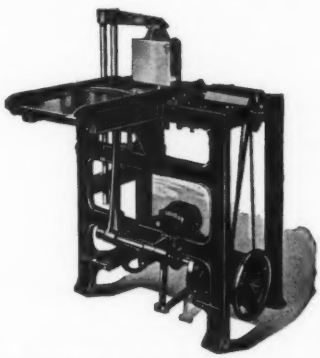
This Story Can Be Told

For 43 years we have been building carton Packaging machines and today we are using our years of experience to produce a wide variety of equipment for our Armed Forces—on land, at sea and in the air.

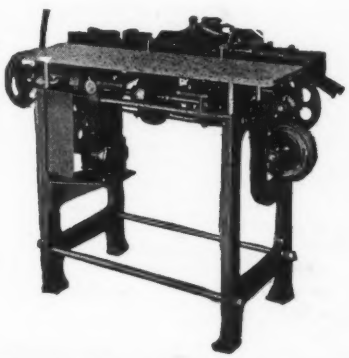
Parts for tanks, submarines and bombers are shipped daily to their destinations and are readily assembled for immediate action. In an all-out effort it is not a question of can you do a job, but more a question of "How soon can you do the job?" Deliveries are of prime importance and we are meeting production schedules as required. Only in this way can our combined efforts be of major importance in hastening Victory

In addition to the great amount of work turned out for the Armed Forces we are taking care of our customers when repair parts are needed. When high priorities are obtained we can also furnish a few new machines *without* interfering with the other work we are doing. Also we are making post-war plans *without* interfering in any way with our immediate task. If you have a post-war problem, send it to us and we will give it careful consideration.

Planning is the key to successful operation. Ask us to plan with you. No problem should be passed up lightly—send it to us and see if we can aid you. Our experience is at your command. Present "The Impossible" to us and let's work it out together.



PETERS JUNIOR CARTON FORMING & LINING MACHINE
SETS UP 30–40 CARTONS PER MINUTE.
ONE OPERATOR REQUIRED.



PETERS JUNIOR CARTON FOLDING & CLOSING MACHINE
CLOSES 30–40 CARTONS PER MINUTE.
NO OPERATOR REQUIRED.

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GENERAL OFFICE AND FACTORY
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SEAL YOUR CARTONS AND PACKAGES WITH JOHNSON'S WATERPROOFING WAXES...

Today many manufacturers forced to turn to paper instead of vital metals are finding Johnson's Waterproofing Waxes *just* what they need for added carton and package protection.

If you are now packaging in paper... especially if your cartons and packages are going overseas... be sure to get full information on Johnson's Waterproofing Waxes. Fill out and send the memo below. Find out how Johnson's Waterproofing Waxes can give your shipments that "extra" protection they need against moisture.

BUY U. S. WAR BONDS AND STAMPS

S. C. JOHNSON AND SON, INC.
RACINE, WISCONSIN

MEMO: to S. C. Johnson & Son, Inc.
Industrial Wax Div., Dept. MP-83,
Racine, Wis.

Send information on Johnson's Waterproofing Waxes to:

Name_____

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VIALS AND TUBES

POINT THE WAY
TO POST-WAR PACKAGING

No matter what you hear about post-war items changing present methods—you can be sure of one thing. LUSTEROID vials and tubes will continue to lead the way in packaging that merchandises as well as protects.

Amazingly light in weight, these modern plastic containers are strong, rigid and unbreakable. They are transparent for ideal product display. They save work, time and money, too.

No protective partitioning or special packing needed. No labels to affix because your label can be reproduced as an integral part of the container. Shipping costs are lower with LUSTEROID.

The vials and tubes come in all colors—clear or opaque with cork, slip-on or screw cap closures. Diameters from 1/4" to 1 1/4" and lengths up to 6".

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WANTED. Cellophane & Acetate. Odd lots bought. Reply R. W. Busse, 389 Lafayette St., New York 3, N. Y.

WANTED. Large manufacturer wants to branch out into the fancy food line such as preserves, jellies, fancy food and cocktail items. Have canning and vacuum packing facilities. Only interested in high quality specialty items suitable for fancy food stores. Financially able to buy outright formulas, patents and Trade Mark names. Reply Box 182, Modern Packaging.

TIN LINED CASES FOR SALE. Due to present conditions we have discontinued our export department and consequently have for sale 75 brand new tin lined wooden cases 21" x 24" x 63", ¾" wood. Cases are stored in a warehouse and are immediately available. Address inquiries to Box 183, Modern Packaging.

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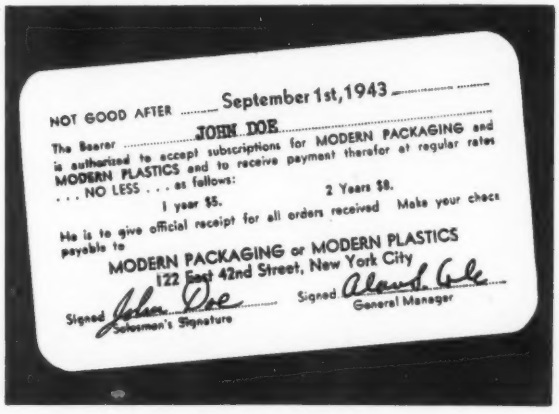
SUBSCRIPTION WARNING

Pay your subscription agent only if he has our *Authorization Card* dated *September 1st 1943.*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Set Up For Bottom Stitching

BLISS TOP and BOTTOM STITCHER

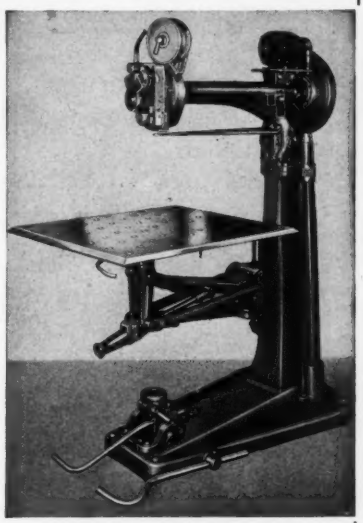
Containers with both tops and bottoms wire stitched are now specified for packing numerous products.

This combination BLISS TOP and BOTTOM STITCHER is recommended for plants whose production does not warrant installation of separate Bottom and Top Stitchers. For assembling cases by bottom stitching, the blade anvil is dropped down against the pedestal and the table is swung to one side as illustrated at left; the post is placed in a socket on the base and locked in position.

After the desired number of containers has been bottom stitched, the post is removed and table and blade anvil swung into position as illustrated at right, for top stitching the filled containers. Less than one minute is required to make the change.

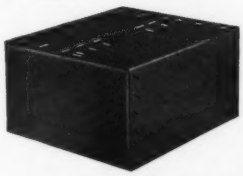
The work table is fitted with ball bearings on which the box may be easily moved in any direction. The table is counter-balanced and is quickly and easily adjustable up or down by hand for boxes of varying heights.

Built in two sizes with 15″ and 25″ throats, and 26″ x 30″ work table. Handles boxes up to 25″ in depth. The standard Heavy Duty Stitcher Head is used. Motor ¼ HP.



Set Up For Top Stitching

Wire stitching both top and bottom provides a uniformly secure closure and gives added strength and rigidity to the case.



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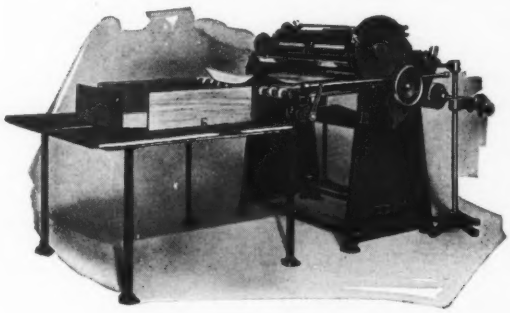
Chicago • Boston • Philadelphia • Cincinnati

Many Great Nations Are Already Planning Post War Programs

as are also many business men—ARE YOU?



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After "Unconditional Surrender" is a fact of history, you will want the highest productive Sheeting equipment obtainable, to meet competition. Your choice may be from the hi-speed Electric Eye machines for "spot sheeting" down to the more simple standard machines for plain work.

Write us to-day for to-morrow.

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Send your sealing, packing or shipping "X's" to us

If there is a practical solution which can be met by means of adhesives, coatings, laminating or combining paper, cloth, or other materials, we'll go after the answer for you.

Already in the interests of Essential War Industries, and others, we have developed such *new materials* as:

Water-resistant Gummed Sealing Tapes,
Luminous Papers, and many others.

Your Inquiry is Invited

MID-STATES GUMMED PAPER CO.

Manufacturers of Green Core Paper and Cloth Gummed Tapes. Mid-States *Really Flat* Gummed Papers, Green Core Stay Papers, and Green Core Gummed Hollands and Gummed Cambrics.

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BRESKIN PUBLISHING CORPORATION
122 East 42nd St. **New York City**

Count us in!

This war is everybody's job. That's why all of us, the folks at the Michigan Carton Co., are giving our work everything we've got. You see, Michigan Cartons are doing some pretty important war jobs these days. On distant fronts they're protecting foods and ammunition—helping deliver the goods faster and in greater quantities. At home they're saving critical materials, precious shipping space and weight.

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To help win the war.

Michigan
CARTON CO.
BATTLE CREEK, MICHIGAN

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Glass Packages
FOR A
WEAPON OF WAR

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Twenty thousand O-I people are fulfilling their obligation to turn out maximum production of the glass America needs.

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